AVer SF2111H-DR

User Manual

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Preface

The SF2111H-DR is a H.264 2-megapixel, full HD dome camera with 3-axis adjustment and a vari-focal lens that allows you to line up the camera precisely where you need it and capture a wide sweep or close into a narrower specific point. It has both the adjustability to capture the exact target area you require and the technology to keep that area under clear day-and-night surveillance. The SF2111H-DR provides smooth 30fps, full HD 1080p video, and a mechanical IR-cut filter plus built-in IR illuminators to give superb performance during the day and at night.

Product Specifications

- Video out support
- 2M-pixel, full HD Definition (1080p) 30fps support CMOS sensor
- Digital Wide Dynamic Range
- Power over Ethernet (PoE)
- H.264/MJPEG/MPEG-4 compression formats
- SD/SDHC card backup (SD card is an optional part)
- 2-way audio
- 3GPP mobile phone/PDA support
- SDK for software integration
- Free bundled AVer NXU Lite recording software
- 3-Axis Gimbals adjustments
- IR LED Built-in 15M
- Mechanism IR Cut Filter available

Specifications

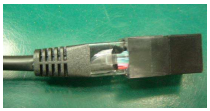
Hardware	
CPU	ARM 9 ,32-bit RISC
RAM	256MB
Flash	16MB
Image sensor	1/2.7” CMOS (2 Megapixel)
Support DC IRIS	Yes
Lens Type	Vari-focal 3~9 mm Megapixel Lens
ICR	Mechanism IR cut Filter

Hardware	
LED	Built-in 18 IR LED
	IR Distance-15M
I/O	1 Sensor in / 1 Relay Out
Video Out	1
Audio In	1
	G.711 (64K) and G.726 (32K,24K) audio compression Input : External Mic In
Audio Out	1 / Output: External Audio Out
Power over Ethernet	Yes
Power Consumption	DC12V: 5.0W (IR LED on)/3.3W (IR LED off) PoE Class 0 (IEEE802.3af): 6.3W (IR LED on), 4.4W (IR LED off)
3-Axis Gimbal Adjustments Angle	Pan: 175° Tilt: 30° ~ 90° Rotation: 172°
Dimensions	132L x 108.4H (mm)
Weight	680g
Operating Temperature	0℃ ~ 45℃
Network	
Ethernet	10/100 Base-T
Network Protocol	HTTP, HTTPS, NTP, UPnP, 3GPP (video only), SAMBA, Bonjour ,SNMP, QoS/DSCP, Access list, RTSP, TCP/ IP, UDP, SMTP, FTP, PPPoE, DHCP,DDNS
System	
Video Resolution	1920x1080, 1280x720, 640x480, 320x240, 176x144
Video Adjust	Brightness, Contrast, Sharpness, Night Mode, D-WDR, Noise reduction
Triple Streaming	Yes

System	
Image Snapshot	Yes
Full Screen Monitoring	Yes
Privacy Mask	Yes, 3 different areas
Compression Format	H.264/ JPEG/ MPEG-4
Video Bitrates Adjust	CBR, VBR
Motion Detection	Yes, 3 different areas
Triggered Action	Mail, FTP, Save to SD/SDHC card, Relay, NAS
Pre/ Post Alarm	Yes (Pre :5 secs / Post: 10 secs)
Security	Password Protection, QoS/DSCP, IP address filtering, HTTPS encryption, data transmission
Firmware Upgrade	HTTP mode, can be upgraded remotely
Simultaneous Connection	Up to 10
Audio	Yes, 2-way (mono)
SD/SDHC card management	
Recording Trigger	Motion Detection, IP Check, Network Breakdown (wire only), Schedule, Alarm
Video Format	AVI, JPEG
Video Playback	Yes
Delete Files	Yes
Web browsing requirement	
OS	Windows® XP (32-bit), 7 (32/64-bit) Microsoft® IE 6.0 or above (32-bit only)
Hardware Suggested	Intel® Dual Core 2.53GHz, RAM: 1024MB, Graphics Card: 128MB
Mobil support	iOS 4.3 or above, Android 1.6 or above.

***SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.**

Package contents

Item	Descriptions
	1. SF2111H-DR
	2. Accessory pack
	3. RJ45 socket
	4. Power Adaptor (DC 12V /1A) (Optional)
	5. CD (User's Manual and Quick Guide included)

Optional accessory

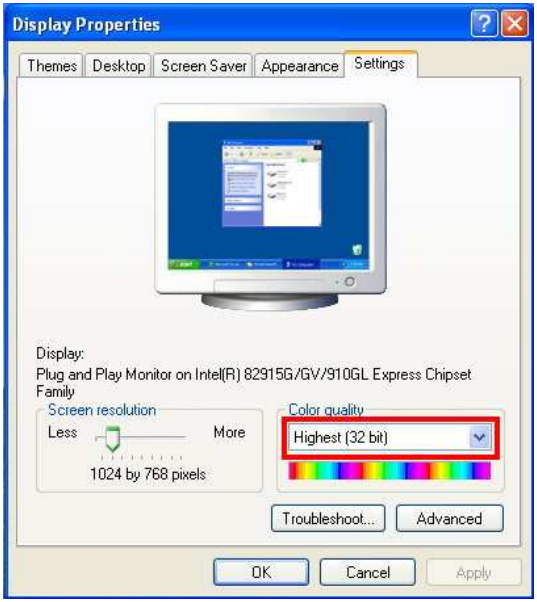
Item	Descriptions
	Junction box Weight: 500g (N.W.) Material: Aluminum Color: Silver-beige Package: 20pcs in one carton

Product Installation

Monitor Setting

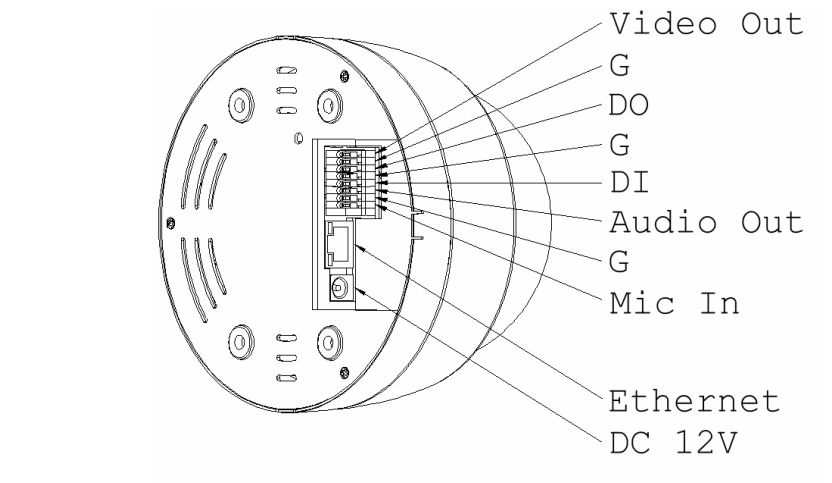
1. Right-click on the desktop. Select " **Properties**"

2. Change "Color quality" to "**Highest (32-bit)**".

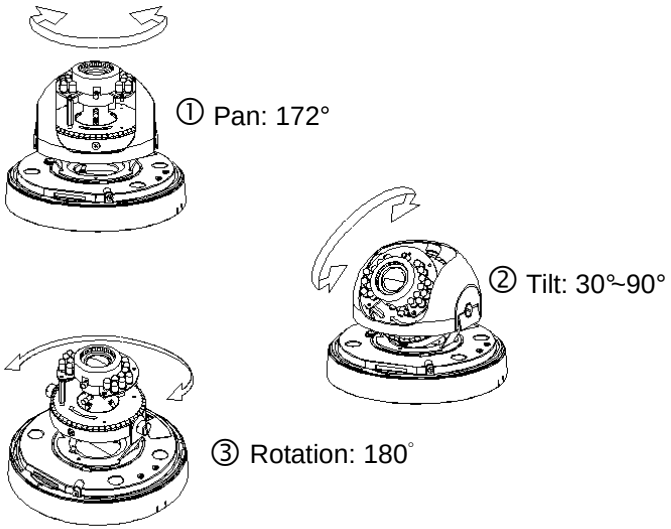


Hardware Installation and I/O Pin Assignment

1. Connect a power adapter and IP camera to PC or local network.

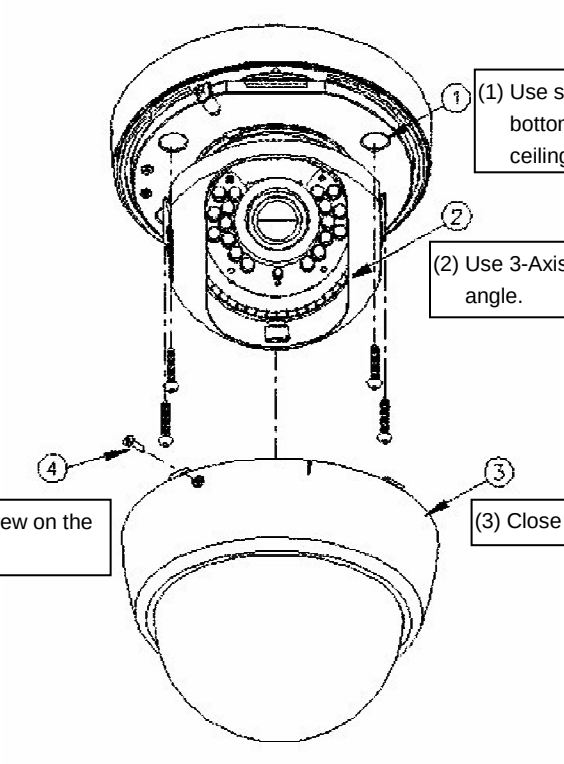


2. 3-Axis Gimbals Adjustments



Once the users open the case, the gimbals adjustment offers the convenience method to install on the wall. The pan, tilt, and rotation are provided in this model. The users can adjust the gimbals with Pan 172 degrees, tilt 30~90 degrees, and rotation 180 degrees respectively.

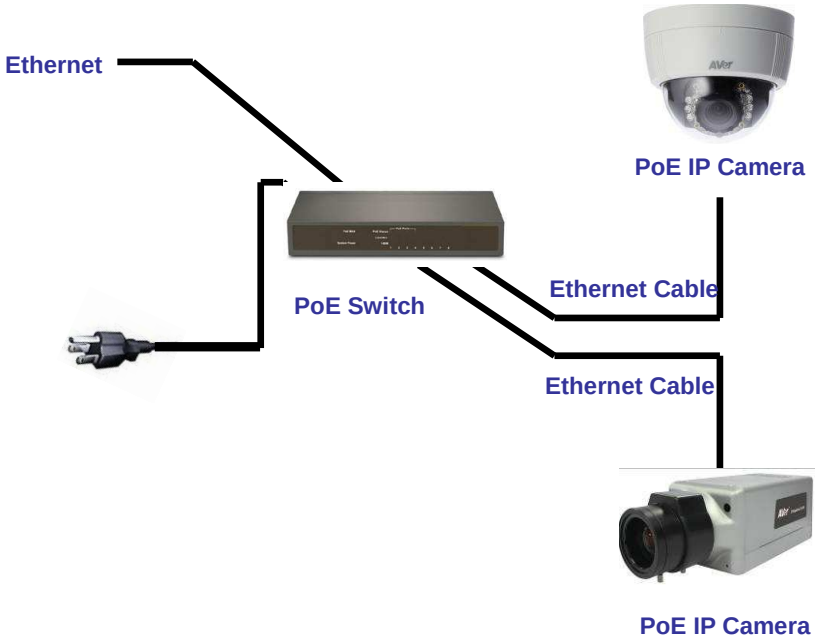
3. Installation steps


1
(1) Use screws to lock the bottom of camera to the ceiling or the wall.
2
(2) Use 3-Axis to adjust the lens angle.
4
(4) Tighten the screw on the cover to fix it.
3
(3) Close the dome cover.

Power Over Ethernet (PoE)

Set up the IP camera through Power over Ethernet (PoE). PoE is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as an IP camera, using the same cable as that used for network connection. It eliminates the need for power outlets at the camera locations and enables easier application of uninterruptible power supplies (UPS) to ensure 24 hours a day, 7 days a week operation.

[Note] 802.3at, 15.4W PoE Switch is recommended. We recommend users to purchase PoE switch from us to ensure the stability when using the IP Cameras. Please contact sales for more details.



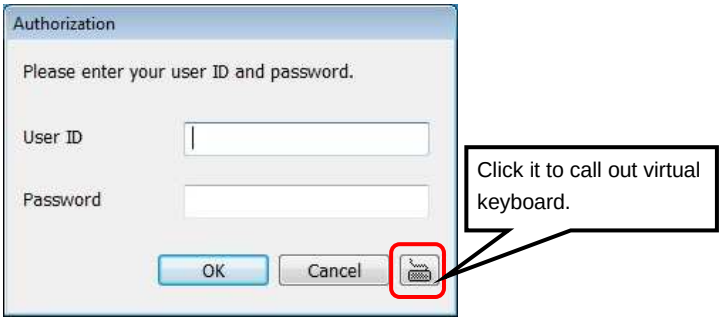
IP Assignment

There are two ways to find IP Camera:

– Finding IP Camera by using “NXU Lite recording software”
– Finding IP Camera by using “IP installer”

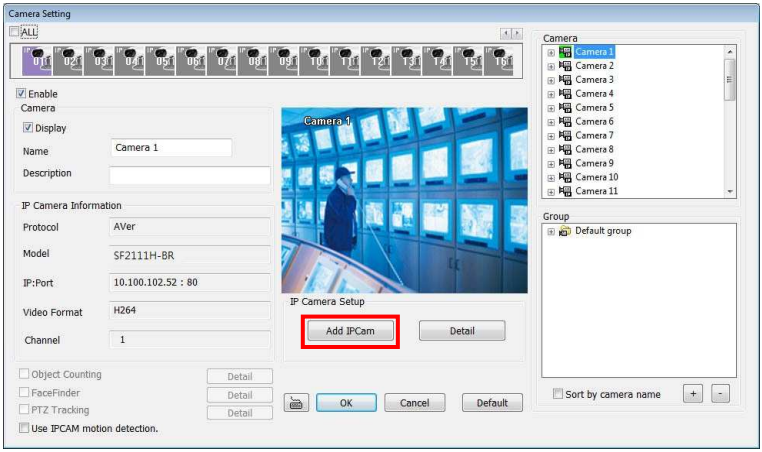
Finding IP Camera by using “NXU Lite recording software”

1. The NXU Lite software is in the attached software CD. Before launching it, please install the software first. During the installing process, users will be required to input a User name and Password for login NXU Lite system. Users can define the User name and Password as wishes. Please refer to NXU Lite user manual for detailed installation instruction.
2. To run the application, double-click on your PC desktop or click **Start** > **Programs** > **DVR** > **NXU Lite**. For security purpose, some of the features would require you to enter User name and Password before it can be accessed. When the Authorization dialog box appears, key in your User ID and Password. (If this is the first time, enter the one you have registered when installing the software.



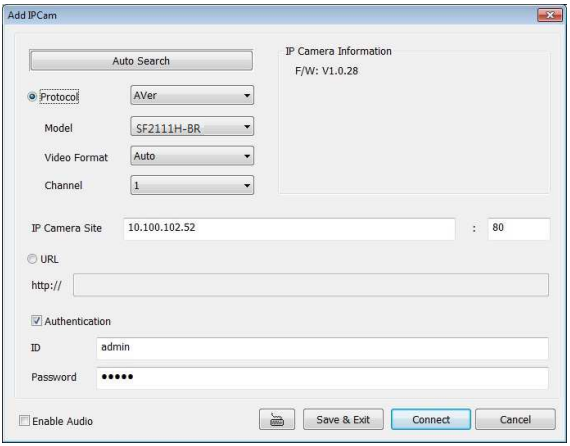
3. Click “**Setup**” button.

4. Click “**Add IPCam**” button.

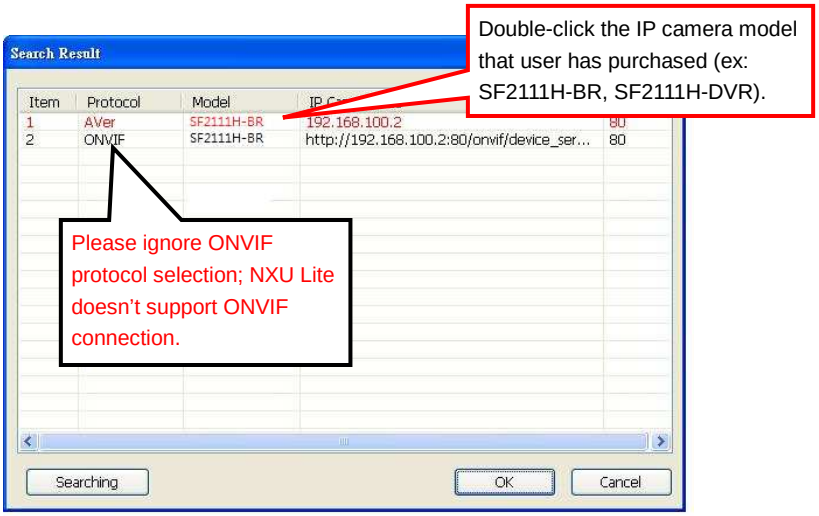


5. Select “**IP Camera**” item.

6. Key in IP Camera's ID and Password (default is **admin/admin**) and click "**Auto Search**" to find camera.



7. In Search Result window, click it the IP camera model that user has purchased (**Please ignore ONVIF connection item**); the camera is in red text that is configurable. User can double-click on the camera is in red text and configure the IP camera's setting; even the IP camera is not in the same IP segment. Press "**OK**" to back to previous screen and press"**Connect**" to start live view.

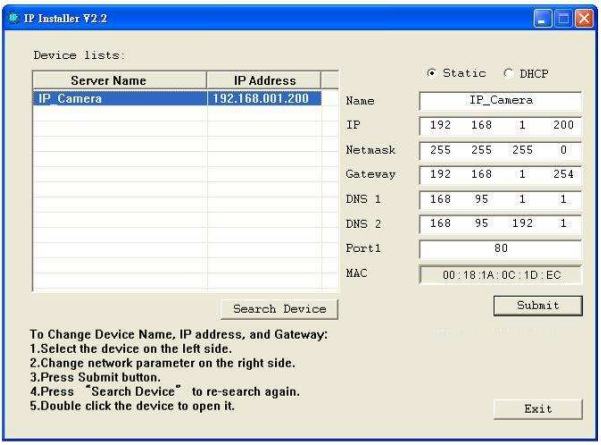


Finding IP Camera by using "IP installer"

1. Use the software, "**IP Installer**" to assign the IP address of the IP camera. The software is in the attached software CD.
2. IP installer supports two languages
   - **IPInstallerCht.exe:** Traditional Chinese version
   - **IPInstallerEng.exe:** English version
3. There are 3 kinds of IP configuration.
   - Fixed IP (Public IP or Virtual IP)
   - DHCP (Dynamic IP)
   - DHCP server/router network automatically assigns IP addresses to devices. You can use the **IP Installer** software in the CD to search for the IP camera(s) in the network.
   - Dial-up (PPPoE)
4. Execute IP Installer
5. For Windows XP (SP2) users, the following message box may appear. Please click "**Unblock**".

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: IPInstaller V2.1 Network Device Scan
Publisher: Unknown
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

IP Installer configuration:



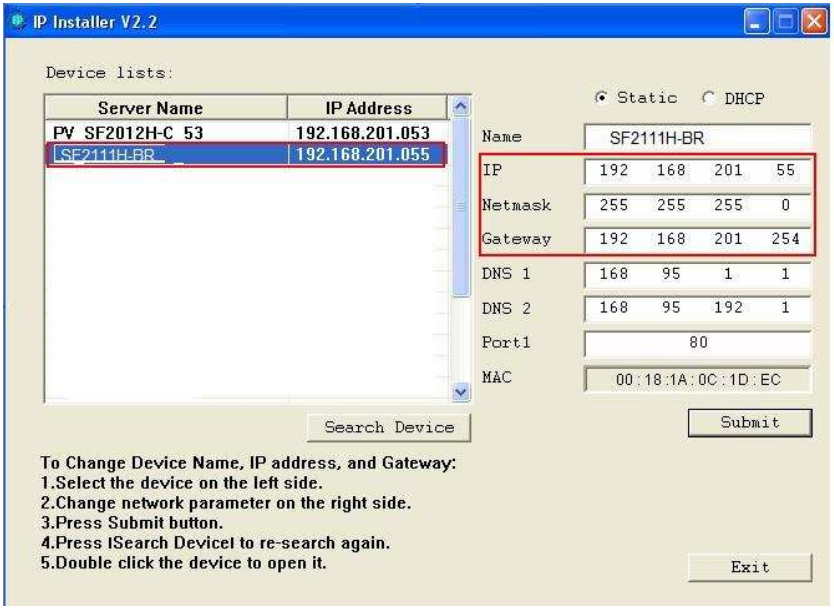
6. IP Installer will search all IP cameras connected on the LAN. The user can click "**Search Device**" to search again.
7. Click one of the IP cameras listed on the left side. The network configuration for this IP camera will show on the right side. You may change the name of the IP camera to your preference (eg: Office, warehouse) in "**Name**" on the right side.

[Note] The server name length has to be less than 15 digits.

Using DHCP Server/Router Network

To use DHCP, please check DHCP and click “**Submit**” then click “**OK**”. It will apply the change and reboot the Device.

Please left-click the mouse twice on a selected IP camera in “Device lists” in IP Installer. Upon doing so, the Internet Explorer browser should open.



Using NON-DHCP Server/Router Network

In Non-DHCP server/router network, the static IP address must be assigned to the device each time when adding another IP camera to the network; the default IP address of the current one must be changed to avoid conflict.

Please make sure the Subnet of the PC's IP address and the IP camera's IP address are the same.

[Example]

The same Subnet:

IP camera IP address: 192.168.1.200

PC IP address: 192.168.1.100

Different Subnets:

IP camera IP address: 192.168.2.200

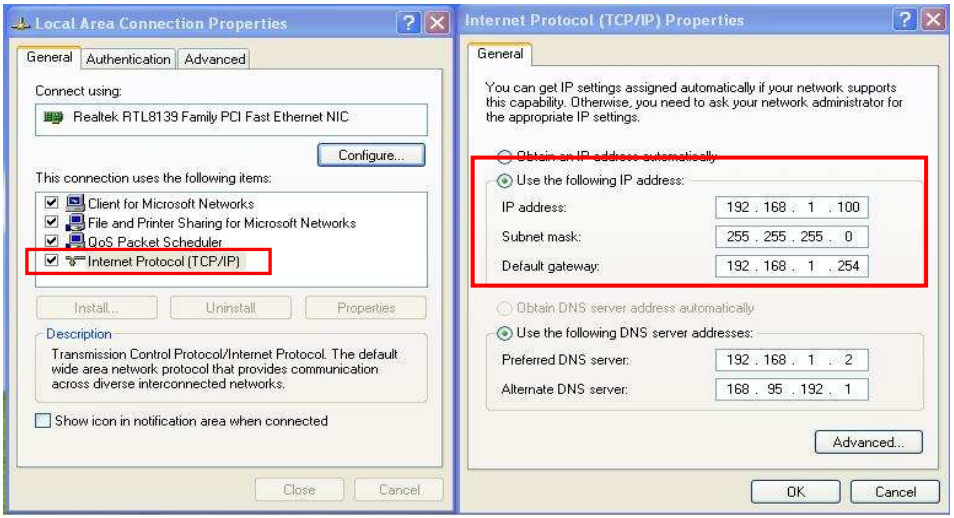
PC IP address: 192.168.1.100

To Change PC IP Address:

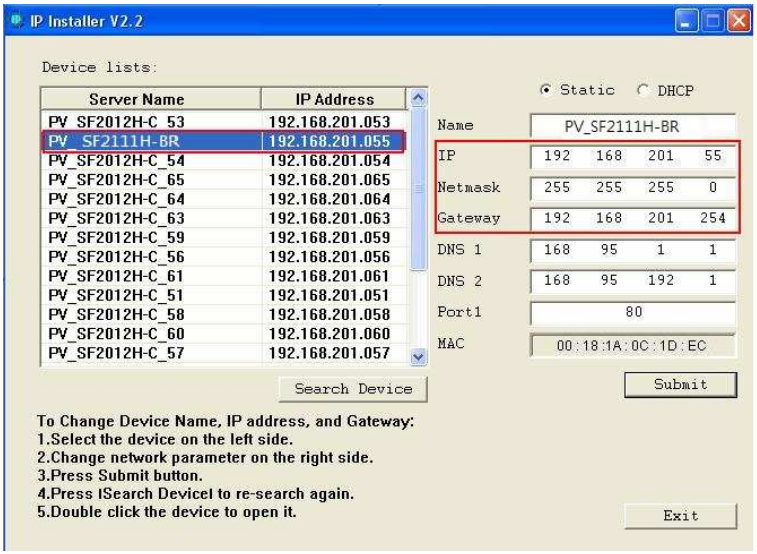
Control Panel→Network Connections→Local Area Connection Properties→Internet Protocol (TCP/IP) →Properties

Please make sure your IP camera and PC have the same Subnet. If not, please change IP camera subnet or PC IP subnet accordingly.

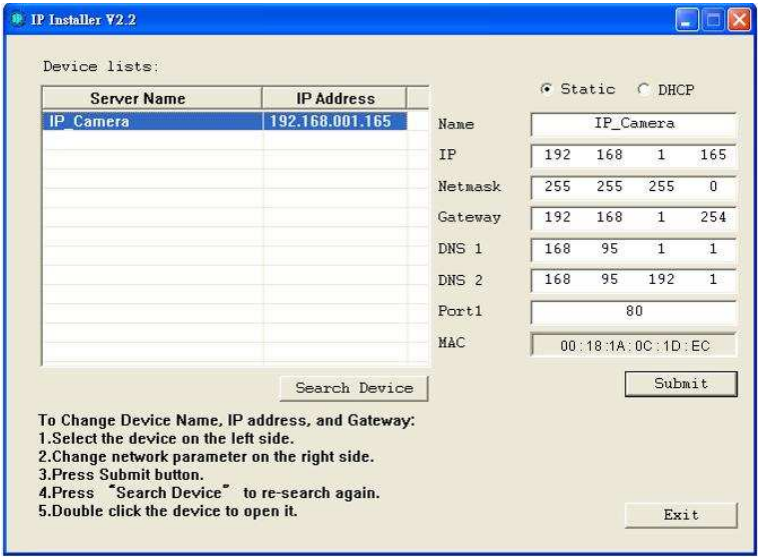
PC's IP address:


Local Area Connection Properties
General
Authentication
Advanced
Connect using:
Realtek RTL8139 Family PCI Fast Ethernet NIC
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Close
Cancel
Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 100
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 254
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 1 . 2
Alternate DNS server: 168 . 95 . 192 . 1
Advanced...
OK
Cancel

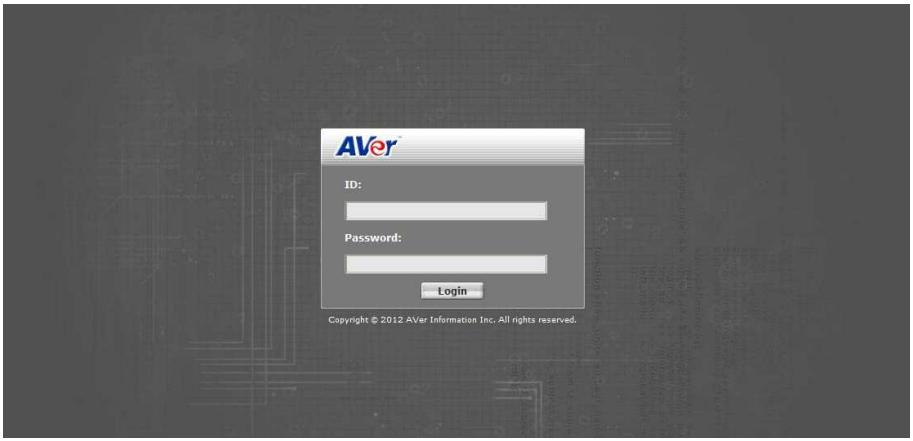
IP camera IP addresses:



8. A quick way to access remote monitoring is to left-click the mouse twice on a selected IP camera in “Device lists” in IP Installer. Upon doing so, the Internet Explorer browser should open.



9. Then, please key in the default “**User name**” and “**Password**”, both of which are “**admin**”.



Install ActiveX Control

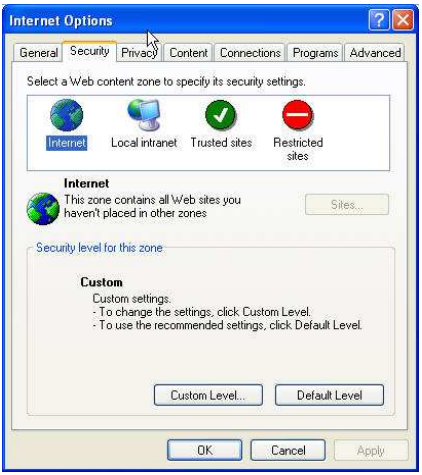
The first time you attempt to view the camera video via Internet Explorer, it will ask you to install the ActiveX component.

If the installation fails, please check the security settings for the Internet Explorer browser.

1. IE → Tools → Internet Options… → Security Tab → Custom Level… → Security Settings → Download unsigned ActiveX controls→ Select "**Enable**" or Prompt.
2. IE → Tools → Internet Options… → Security Tab → Custom Level… →Initialize and script ActiveX controls not marked as safe → Select "Enable" or Prompt.

1

2



3

4

5

When the following dialogue box appears, click “**Yes**”.

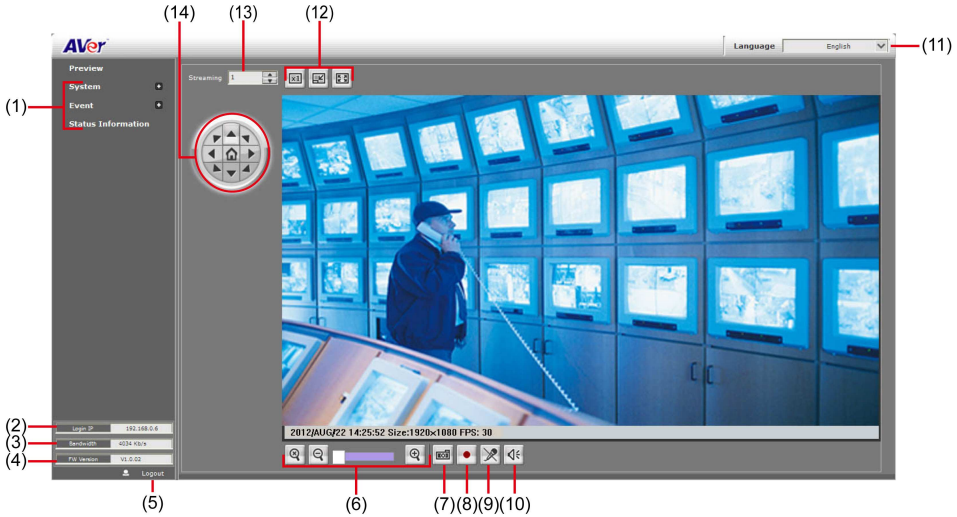
Using the IP Camera Browser Interface

The admin have the full access to the IP camera browser interface. The menu on the left, you can expand and navigate to access all the features.

Preview

Launch the Internet Explorer browser, type the IP address of the IP camera in the address field. It will show the following dialogue box. Key-in the"**ID**" and "**Password**". The default"**ID**" and "**Password**" are both "**admin**".

Once connected to the IP camera, the following program interface will appear.



Name	Function
(1) System/Event/Status Information	Set up IP camera's configuration.
(2) Login IP	Show PC's IP address

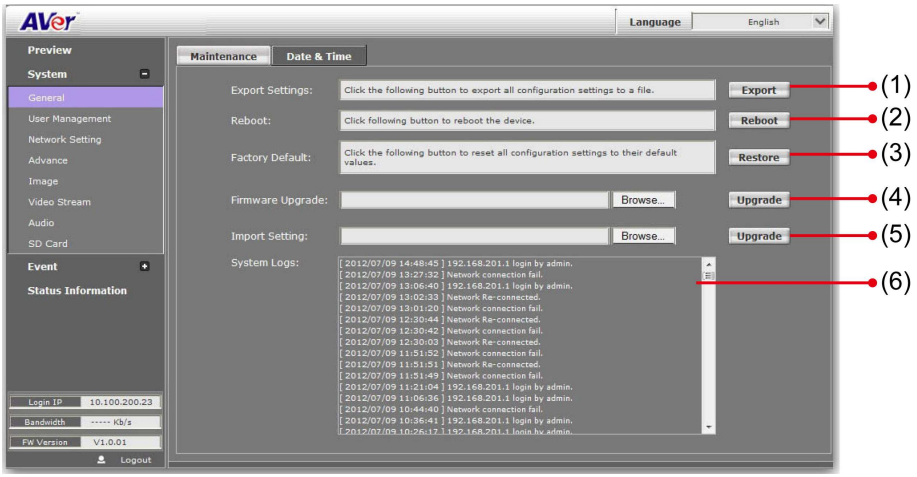
Name	Function
(3) Bandwidth	Show current IP camera's transmitting bandwidth
(4) FW Version	Show IP camera's current firmware version
(5) Logout	Exit the application
(6) Zoom control	Reset zoom level. Increase zoom level. Decrease zoom level. Use the scroll bar to zoom in or zoom out the video screen
(7) Capture	Capture and save the image on the screen in *.bmp format
(8) Record	Start/stop audio and video recording. The recorded video will be saved in *.avi format.
(9) 2-way Talk	Click the Microphone button to talk to IP camera side from user site. Click this button again to mute this function.
(10) Speaker	Turn on the PC's speaker so that PC side can hear sound from IP camera side. Click this button again to mute this function.
(11) Language	Select the browser interface language.
(12) Video screen	Change the video screen display. Display the actual video pixel size Display the video screen in compact size. Display the video in full screen mode. Press ESC to exit full screen mode.
(13) Stream	Switch to view the video stream type. The IP camera can send multiple video streams of up to 3 types. To change the video stream setting, go to System > Video Stream. **[Notes]**When streaming 2 setting in"**Video Setting**" is closed, there won't have other stream option
(14) Direction Controller	Move the position of the view point while in zoom mode. User has to zoom in first.

System > General

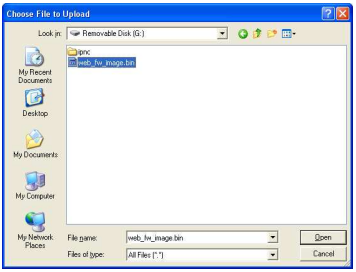
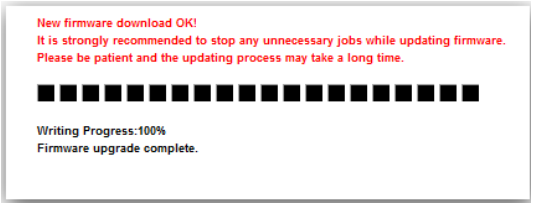
In this section, only admin level is authorized to configure the IP camera system maintenance and the date and time settings.

System > General > Maintenance

In the Maintenance tab, the administrator can check the system event log, upgrade the system firmware, reset the configuration settings without having to change the user management and network settings, reboot, and restore all back to factory default settings.

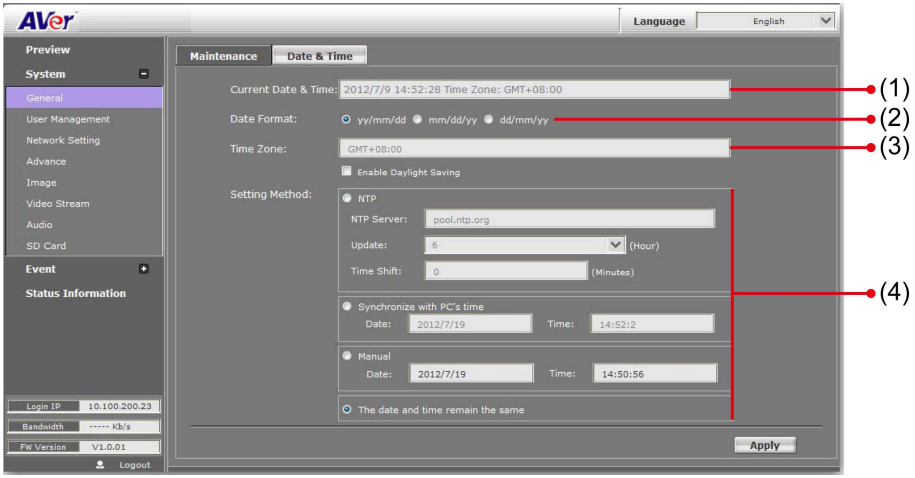


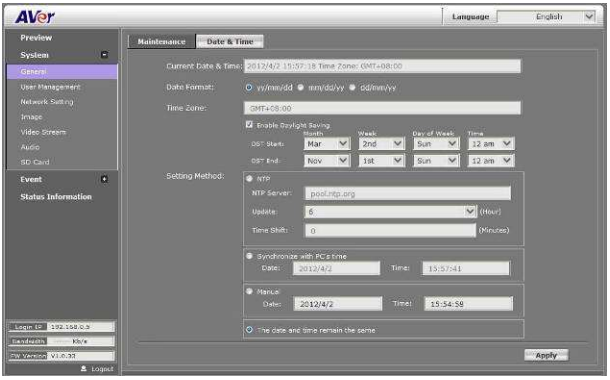
Name	Function
(1) Export Settings	Upload to save all the configuration settings from the IP camera to computer hard disk.
(2) Reboot	Turn the IP camera off and on again.
(3) Factory default	Set all the configuration settings back to default except the user management and network settings.

Name	Function
(4) Firmware Upgrade	Upgrade the firmware to the latest version. **To Upgrade the IP Camera Firmware** 1. Download the file from our website and save it in your computer hard disk. 2. Click Browse. Locate and select the file and click Open. 3. Click Apply. Wait till you see the massage "Firmware Upgrade OK!!". You may now click the Internet Explorer browser refresh button or press F5. The login page will appear.  
(5) Import	Download to replace the current settings with the configuration settings file from the computer hard disk to IP camera.
(6) System log	Display the IP camera system event log.

System > General > Date & Time

In the **"**Date & Time**"** tab, **the** admini**strator** can set and update the system**'s** date and time. After **filling in** the **correct** setting**s**, click **Apply** to apply the new settings.



Name	Function
(1) Current Date & Time	Display the current date and time.
(2) Date Format	Select the date display format.
(3) Time Zone	Set the local time zone. Check the box next to "Enable Daylight Saving" to enable and setup the start date and end date for daylight saving time. 

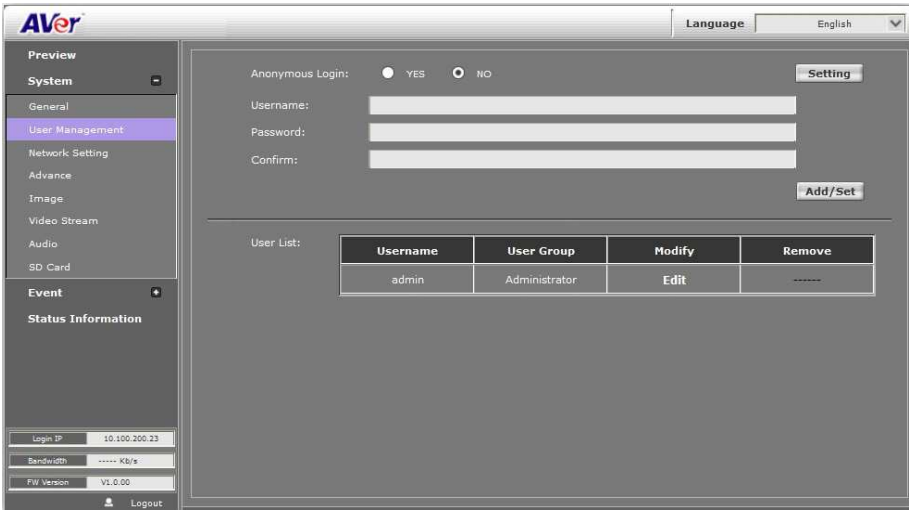
Name	Function
(4) Setting Method	Select the date & time settings method. **Sync with current PC** – Obtain the date and time setting on the current login computer. **Sync with NTP Server** – Obtain the date and time setting from NTP server. In the drop-down list, select the NTP host name. **Manual** – Manually set the date and time. Click "**Done**" to close the date and time interface.

System > User Management

In this section, only admin level is authorized to create, delete, and edit the account in Account tab and configure the client connection setting in Connection tab.

System > User Management > Account

IP camera supports two different user accounts – Administrator (Admin) and Guest User.



User Type	Access Rights
Admin	Can access all the configuration pages
Guest User	Can only access the preview and status information pages.

- **Anonymous User Login**
  - ✓ **Yes:** Allow an anonymous user to view the IP camera without logging in.
  - ✓ **No:** Need user name & password to access this IP camera
- **Add user:** Enter the user name in "**Username**", the password in "**Password**", and re-enter the

password in “**Confirm**”. Then, click “**Add/Set**”.

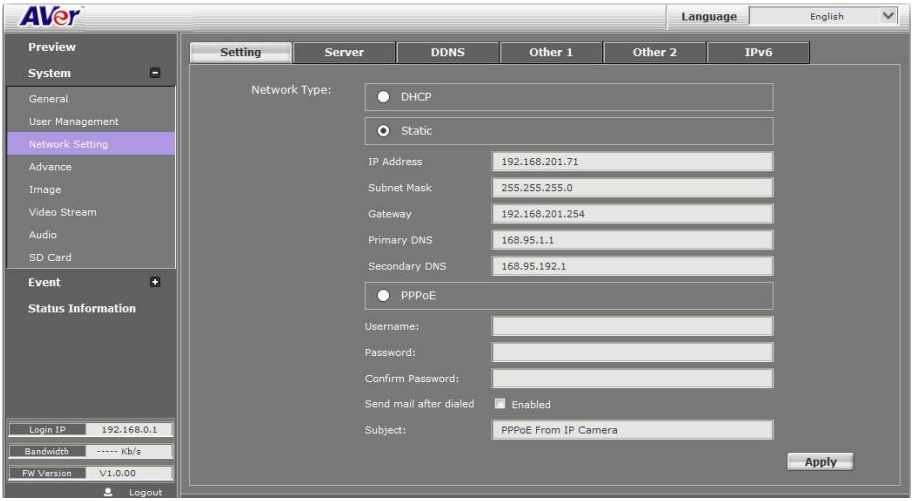
- **User List:** Click **edit** to change the account password. To delete the user account, click **Remove** button.

[Note]

1. The password can’t be empty, otherwise, user are not able to login successfully.
2. Please don’t use special symbols as user name such as *, %, $, &.

System > Network Setting > Setting

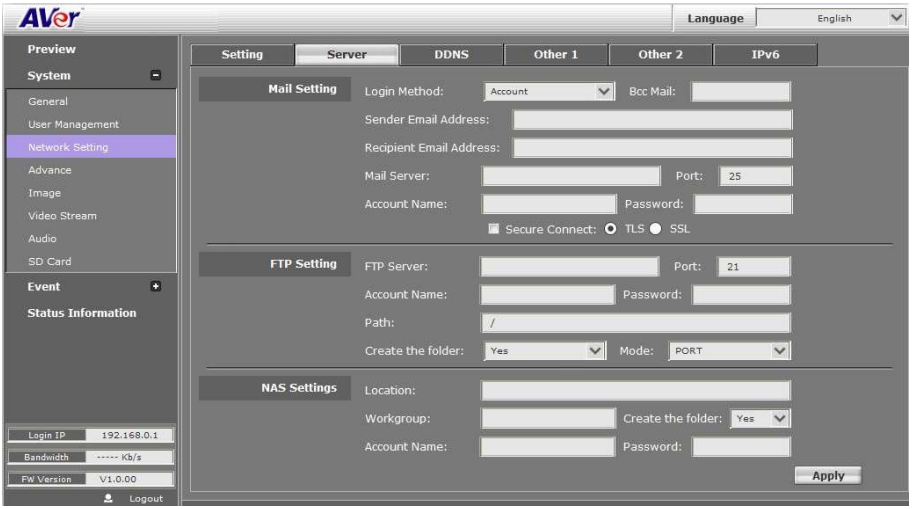
- **Device Name:** Used to name the IP camera to search more easily for this specific one among all connected IP cameras.



- **Network Type:** IP camera supports DHCP, static IP and PPPoE. After completed all settings, click **Apply** to save the configuration.
  - **DHCP:** Using DHCP, IP camera will get all the network parameters from DHCP server automatically.
  - **Static IP:** Please enter the IP address, subnet mask, gateway, Primary DNS, and Secondary DNS.
  - **PPPoE:** Enter the **Username**, **Password** and re-enter Password in **Confirm Password** for the ADSL connection. And then click **Apply** to save the configuration.

System > Network Setting > Sever

Used to send out the video via Email or FTP, or to save on NAS.

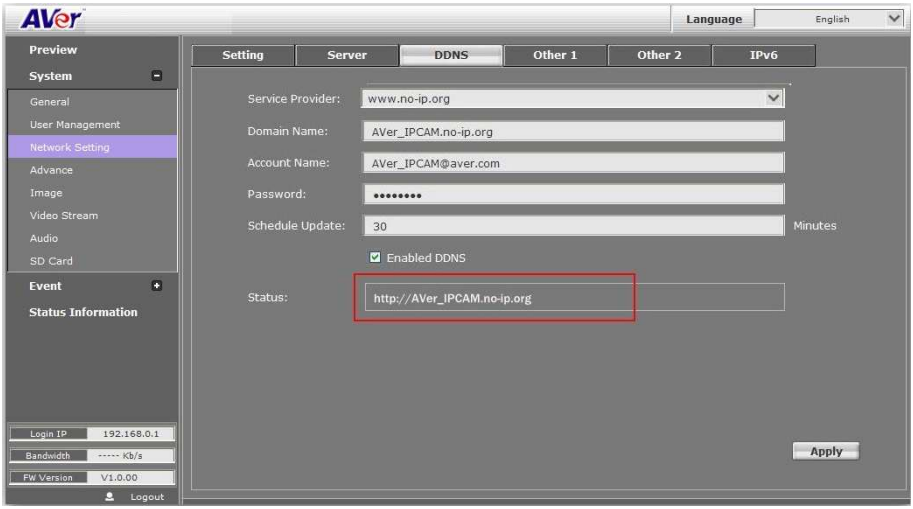


- **Mail Setting:** Used to send out the video via Email.
  a. **Login Method:** Click drop-down list to select the method to login Email server – "**Account**" or "**Anonymous**".
  b. Enter necessary information in "**Bcc Mail**", "**Sender Email Address**", "**Recipient Email Address**", "**Mail Server**", "**Mail Server Port**", "**Account Name**", and "**Password**" columns.
  c. Click "**Apply**" to save the configuration.
- **FTP Setting:** Used to send out the video to FTP server.
  a. Enter necessary information in "**FTP Server**", "**Account Name**", "**Password**", and "**Path**" columns.
  b. **Port:** Select the FTP server port.
  c. If the user wants to create a new folder on the FTP server to save the video file, select "**Yes**" under the "**Create the folder**".
  d. **Mode**: Select the FTP transmission mode.
  e. Click "**Apply**" to save the configuration.

- **NAS Settings:** Used to send out the video to NAS server.
  a. Enter necessary information in "**Location**", "**Workgroup**", "**Account Name**" and "**Password**" columns.
  b. If the user wants to create a new folder on the NAS server to save the video file, select "**Yes**" under the "**Create the folder**".
  c. Click "**Apply**" to save the configuration.

System > Network Setting > DDNS

The IP camera supports DDNS (Dynamic DNS) service.



a. Select "**Enabled DDNS**" to enable DDNS function.
b. Enter the **Domain Name**, **Account Name**, and **Password** that the user has registered on the DDNS service provider in the appropriate columns.
c. Enter the IP refreshing time period in the "**Schedule Update**" column.
d. Click "**Apply**" to save the configuration.

[Note] If you set up schedule update to occur too frequently, the IP may be blocked. In general, performing schedule update once a day (1440 minutes) is recommended.

■ **Status**

- **Common warning message:**

Updating!
Failed(1), Please check your DNS setting.
Failed(2), Please check your internet connection.
Failed(3), Please check your internet connection.
Failed(6), receiving data failure

- **Warning message from different service provider:**

✧ **Server Provider : dyndns.org**

Failed(4),Please check the Dyndns.org.
Error : The system parameter given is not valid.
Error : No user agent was specified.
Error : The username and password pair do not match a real user.
Error : An option available only to credited users was specified.
Error : Not in the form hostname.domain.org or domain.com.
Error : The hostname specified does not exist.
Error : Not under the username specified.
Error : Too many or no hosts specified in an update.
Error : The hostname specified is blocked for update abuse.
Error : DNS error encountered.
Error : DNS Server Error Conditions.

✧ **Server Provider : ddns.camddns.com(TW)**

Failed(5), The name has already been registered.

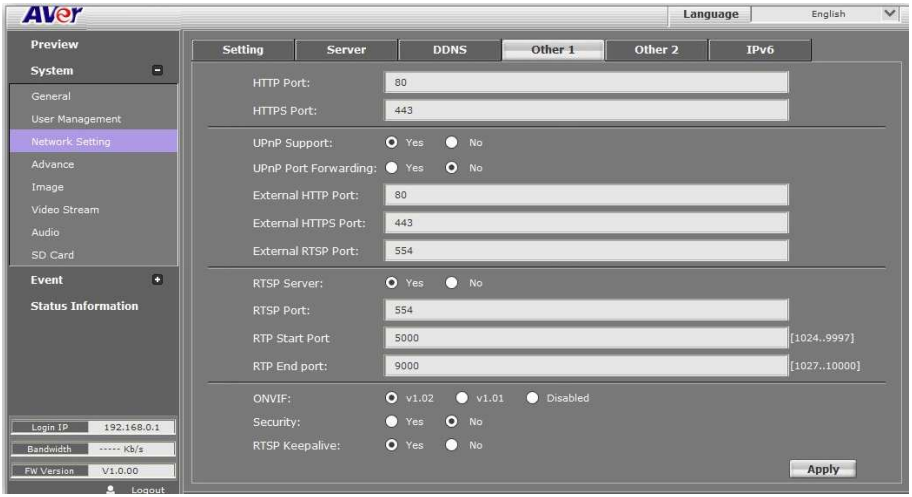
✧ **Server provider : ddns.ipddn.com(HK)**

Failed(5), The name has already been registered

✧ **Server provider : www.3322.org.**

Failed(4), Please check the www.3322.org.

System > Network Setting > Other 1



User may need to assign different port to avoid conflict when setting up IP assignment. Click **Apply** to save the configuration.

- **HTTP Port:** setup web page connecting port and video transmitting port (Default: 80)
- **HTTPS Port:** AVer IP Camera supports encrypted browsing using HTTPS. This is configured on the System > Advance > HTTPS
- **UPnP Support:** This IP camera supports UPnP, if this service is enabled on your computer, the camera will automatically be detected and a new icon will be added to “My Network Places.”

  [Note] UPnP must be enabled on your PC.

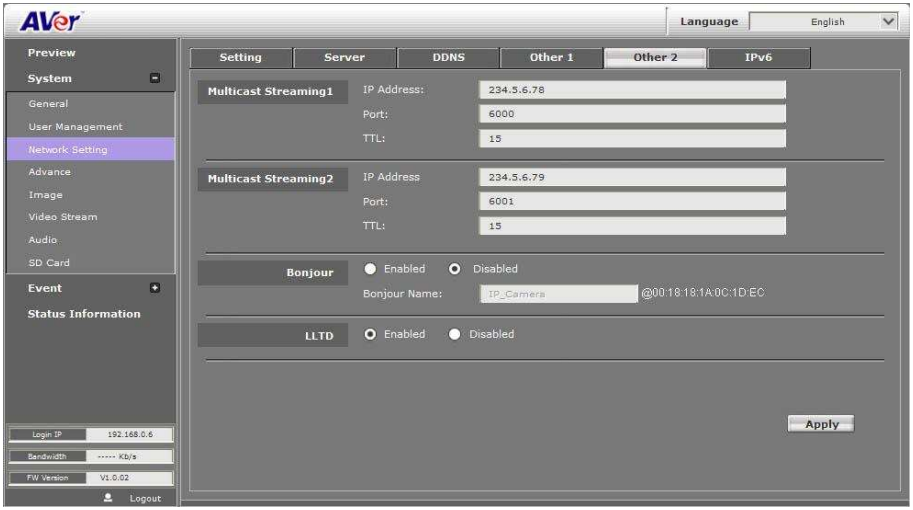
  Please follow the procedure to activate UPnP.

  1. Open the **Control Panel** from the Start Menu.
  2. Select **Add/Remove Programs**.
  3. Select Add/Remove Windows Components and open Networking Services section.
  4. Click **Details** and select **UPnP** to setup the service.
  5. The IP device icon will be added to “**My Network Places**”.
  6. User may double click the IP device icon to access IE browser.
- **UPnP Port Forwarding:** If the IP camera is set up behind the firewall, please select YES to enable it.
- **RTSP Server:** Enable/disable RTSP function. The Real Time Streaming Protocol (RTSP) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.
- **RTSP Port:** setup port for RTSP transmitting (Default: 554)

- **RTP Start and End Port:** in RTSP mode, you may use TCP and UDP for connecting. TCP connection uses RTSP Port (554). UDP connection uses RTP Start and End Port.
- **ONVIF:** User can enable ONVIF standard and select the ONVIF version or disable it.
- **Security: Yes** is required account and password to connect with this IP camera through ONVIF protocol. **No** is not required account and password to connect. (Make sure the NVR system supports ONVIF v1.02.)
- **RTSP Keepalive:** To keep connection until remote site disconnects it.

System > Network Setting > Other 2

Multicast Setting (based on the RTSP Server): User can setup two streaming based on the RTSP Server.



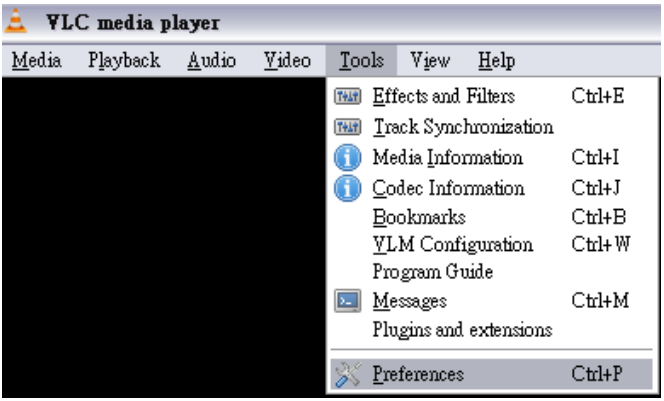
Multicast operation example:

The application is to get the multicast streaming in the LAN environment. Basically, the users operate VLC player, and then you can get the multicast streaming form IP camera.

Please follow the steps to obtain the multicast streaming in the following steps:

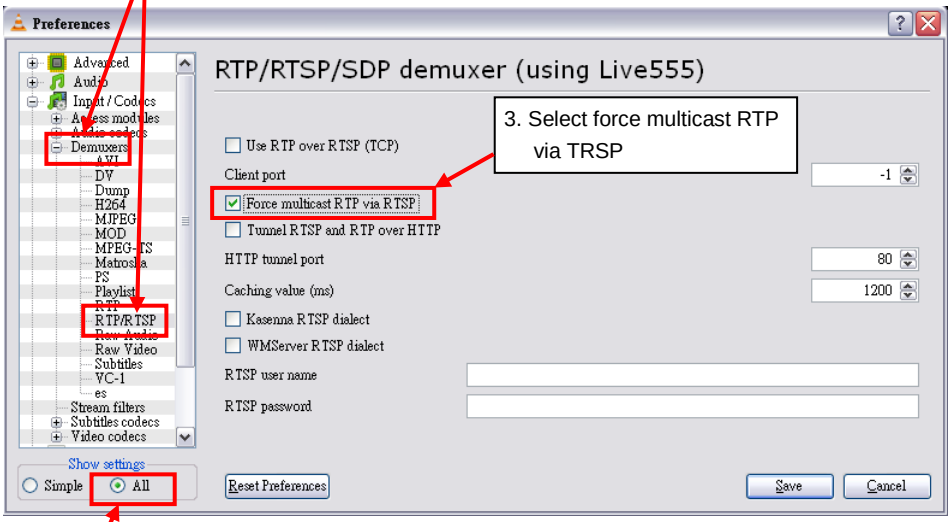
Step 1:

1. Implement VLC player (please download from the internet)
2. Select /tools/preferences



Step 2:

2. Select Demuxers and RTP/RTSP

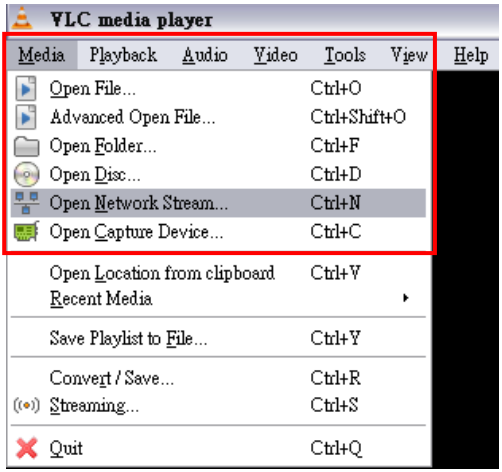


3. Select force multicast RTP via TRSP

1. Select all

Step 3:

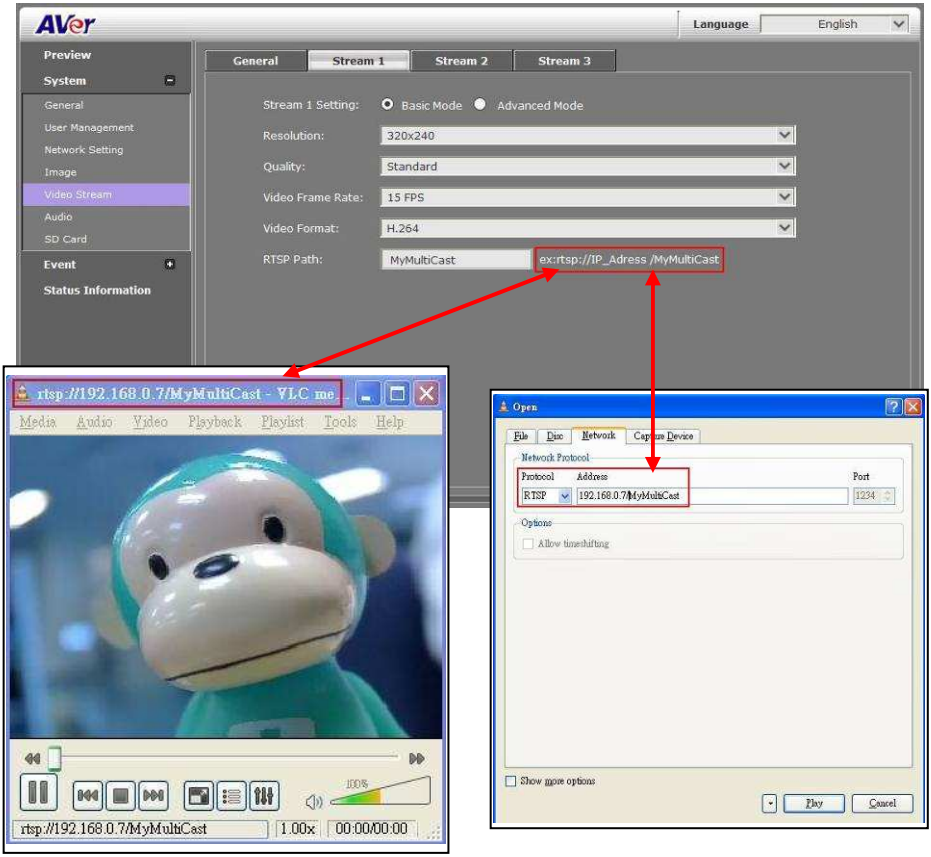
Select Media/open network stream



Step 4:

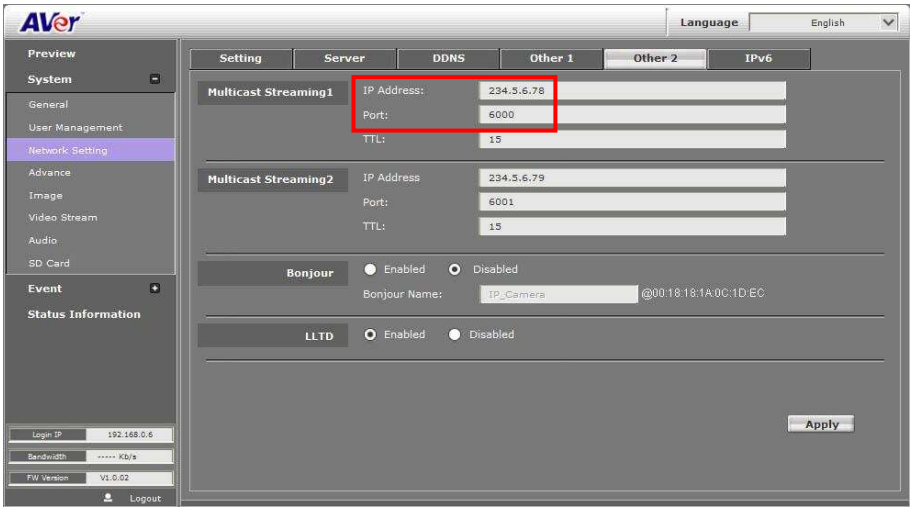
Input **rtsp://[IPCAM Address] / [RTSP Path]**

The URL address should be the same as the RTSP path in Video Stream (System-->Video Stream)

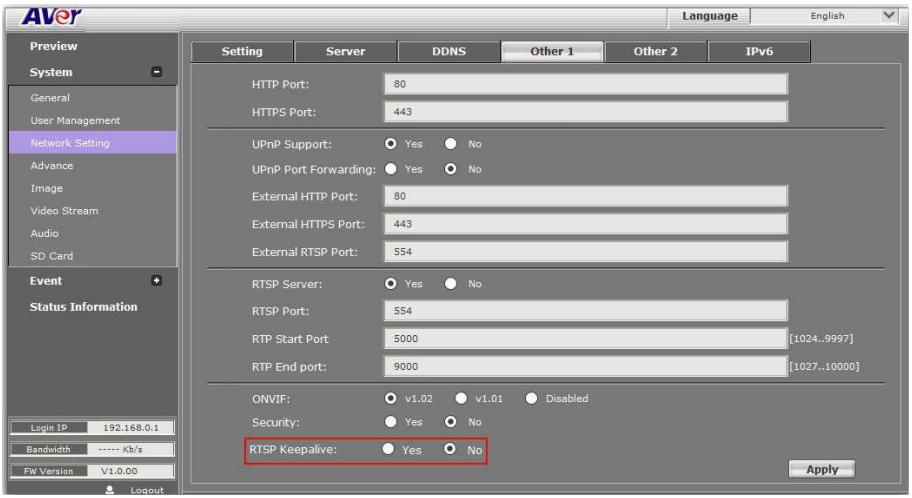


[Notice]

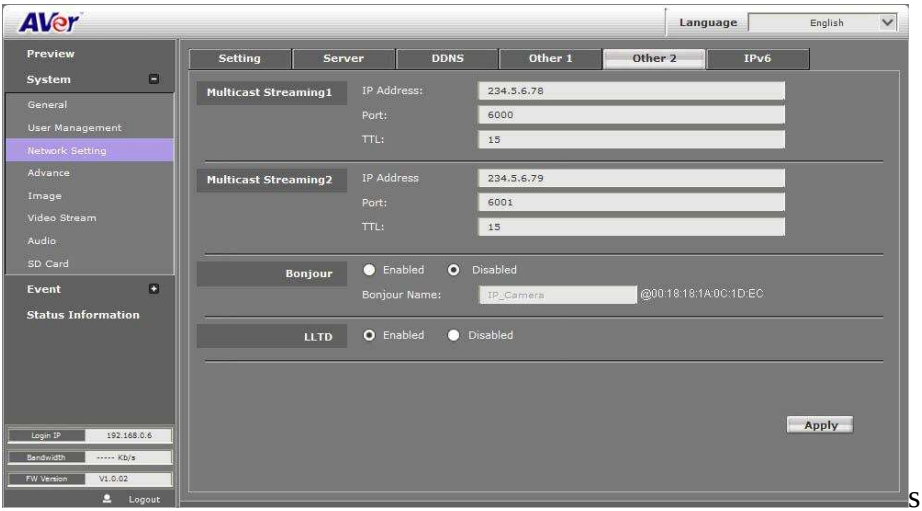
a. If the received image is not from the required IP camera, please adjust the value. (Change either IP Address or Port number)



b. If the Multicast stream you use doesn't support RTSP Keepalive, please select NO.



- **Bonjour:** This function enables MAC systems to link to this IP Camera. Please key in the name here (Safari supports Bonjour protocol).
- **LLTD:** If your PC supports LLTD, enable this function then you can check the connection status, properties, and device position (like IP address) of this IP Camera in the network map. In the computer running Windows Vista or Windows 7, you can find LLTD through the path **Start** → **Control Panel**→ **Network and internet**→ **Network and Sharing Center**→ Click " **See full map**".



S

System > Advance > HTTPS

HTTPS (Hypertext Transfer Protocol Secure): Https can help protect streaming data transmission over the internal on the higher security level. You can select the connection type. "Https" means user cannot connect the camera via Http protocol. The HTTPS path will be: "https :///(IP address)/". If you select "Http & Https", both the Http and HTTPS path can be used to access the camera

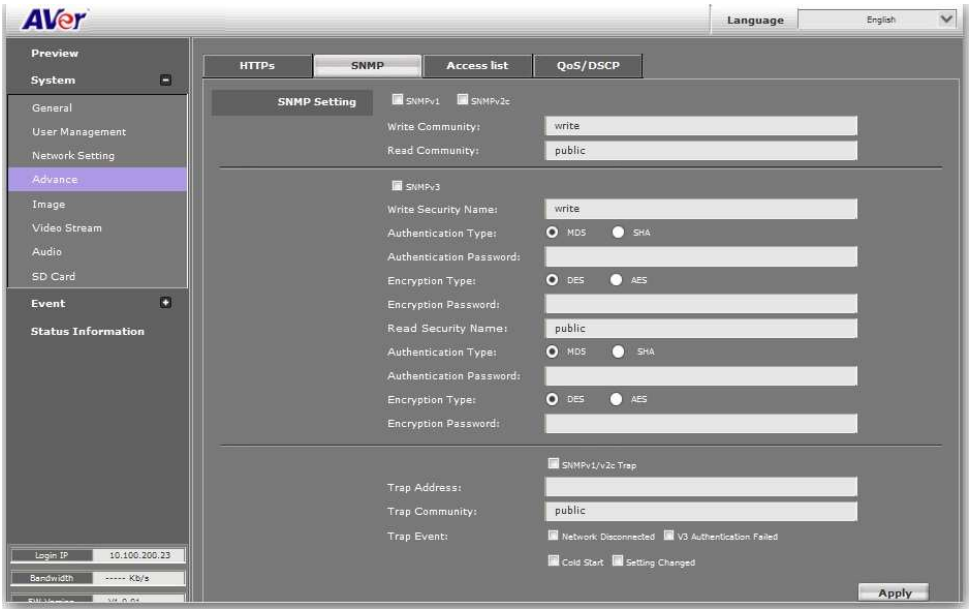
Remove the existing setting: Before setting new request, please remove old secure identification. Select "Http" connection type and click "Remove".

Created Request: Setting the secure identification and apply it.

There are two ways to set Certificate- Install Signed Certificate or Create Self-Signed Certificate.

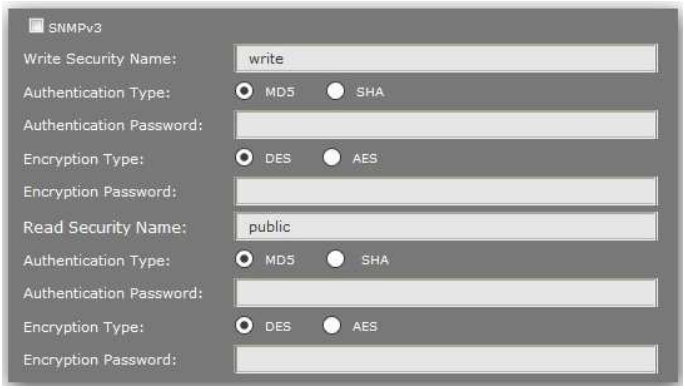
System > Advance > SNMP

SNMP (Simple Network Management Protocol) provides a simple framework for administering networked hardware. To manage the IP camera, you have to prepare a MIB browser or similar tools first. SNMPv1, SNMPv2c, and SNMPv3 can be enabled simultaneously.



- **SNMPv1 and SNMPv2:** The term "Community name" in SNMPv1 and SNMPv2c can be roughly regarded as key. The person who has the community name has the authority to read or edit the information of IP camera via SNMP. Check the box to enable SNMPv1 or SNMPv2c protocol, and specify the community name for write (read and write) and read (read-only). The user who uses read community name to access the IP camera cannot modify any data of this camera.

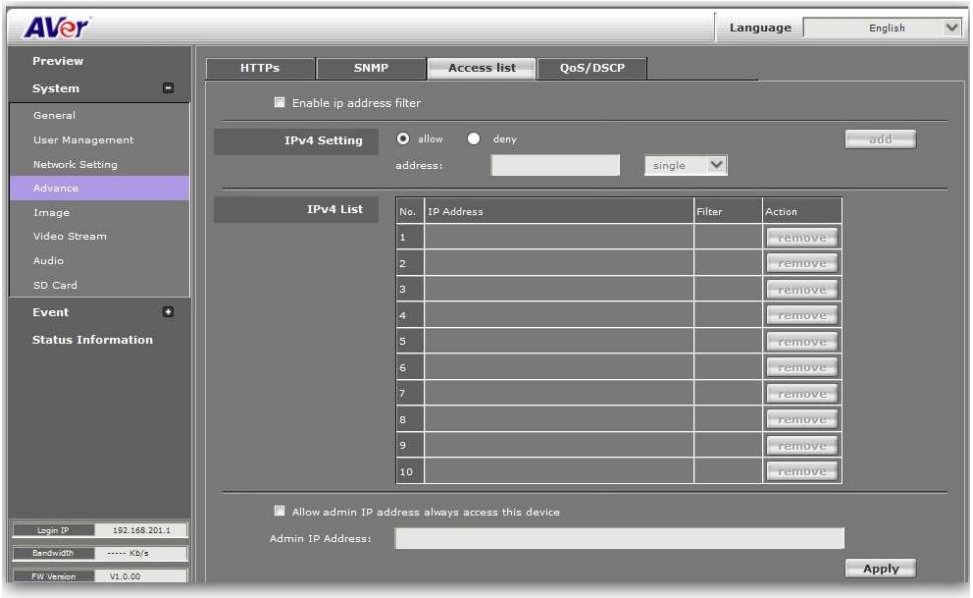
- **SNMPv3:** For data security reason, the authentication and encryption assurances are added when developing SNMPv3. The user has to give not only the security name (the same as "community name" in v1&v2c, or sometimes we call it "context name") but the password in order to access the IP camera. Please set security name, authentication type, authentication password, encryption type, encryption password of write and read respectively. The password must be 8~64 bits in length. Different from in SNMPv1 and v2c, the user have to create a account when using SNMPv3. In the account parameters, key in the security name and password you set in the camera to get accessing.



- **SNMPv1/v2cTrap:** Trap is a mechanism that allows the managed device to send messages to manager instead of waiting passively for polling from the manager. Specify the trap event. When those events happen, the camera will send the ring message to the Trap Address, which is usually the manager's IP address. Trap Community means the community that can receive the trap message.
  - **Cold Start:** The camera starts up or reboots.
  - **Setting changed:** The SNMP setting is changed.
  - **Network Disconnected:** The network connection was broken down. (The camera will send trap messages after the network being connected again)
- **V3 Authentication Failed:** A SNMPv3 user account tries to get authentication but failed. (Due to incorrect password or community)
- **SD Insert / Remove:** A Micro SD card is inserted or removed.

System > Advance > Access list

You can deny an IP address or a range of IP address so that they cannot access the IP camera. Tick the "enable" box, key in the IP address you want to deny, select" deny" then click "Add" to add it to the list. You can also choose to deny a range of IP address but allow one or several IP address of them. Take the picture above for example, IP address192.168.50.151~161 is not allowed to connect to the camera, but only 192.168.50.159 can access. Note: In the list "allow" condition must be ranked before "deny" condition. For example, if we exchange the sequence, set "Deny: 192.168.50.151 ~ 192.168.50.161" for the first item and "Allow: 192.168.50.159" for the second item in the list, the IP "192.168.50.159" turns out to be denied by the camera because the "deny" condition has the priority according to our ranking way.



System > Advance > QoS/DSCP

QoS/DSCP(Quality of Server/Differentiated Services Code-point) specifies a simple mechanism for classifying and managing network traffic and provide QoS on IP networks. DSCP is a 6-bit in the IP header for packet classification purpose. The number 0~63 for Live Stream, Event / Alarm, and Management represent the ratio that the bandwidth is divided. For example, if you set5, 10, and 20 for the three items, then the bandwidth of the three item is 5:10:20. There is no difference between setting "0, 0, 0" or "63, 63, 63" because under these two setting the three items will get equal bandwidth (1/3).

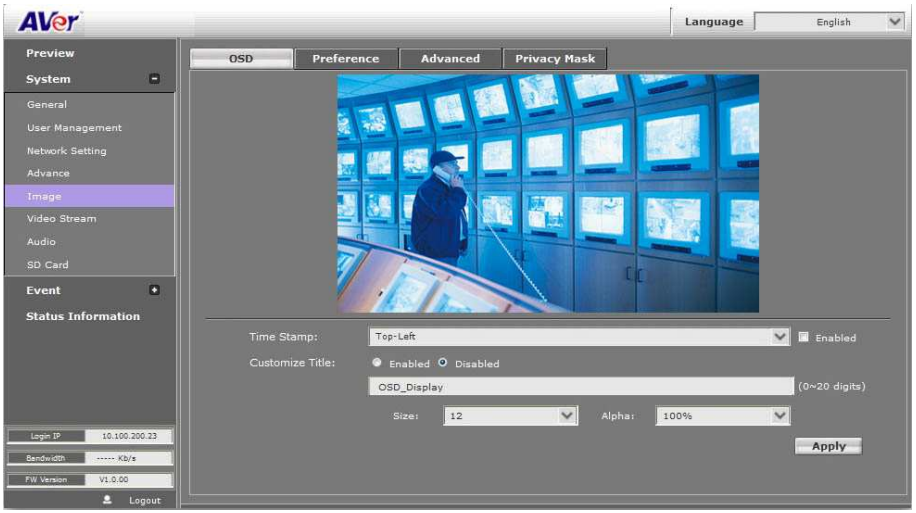
System > Image

Admin and operator levels can adjust the Image setting. There are 5 tabs: OSD, Preference, Exposure, Advanced, and Privacy Mask

System > Image > OSD

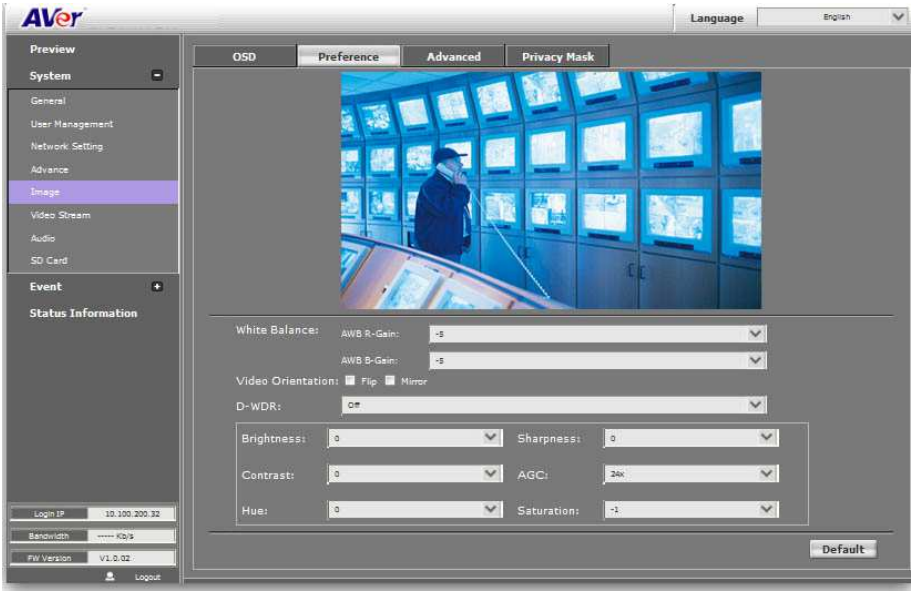
In OSD tab, you can enable/disable overlaying time stamp and text title. After completing the setting, click Save to apply the new setting and Cancel to keep the new setting.

- **Time Stamp:** Mark **Enable** check box and select a position where date and time stamp / text to display on video screen.
- **Customize Title:** Click **Enabled** can adjust the OSD contents which are including **Size** and **Alpha** of text.



System > Image > Preference

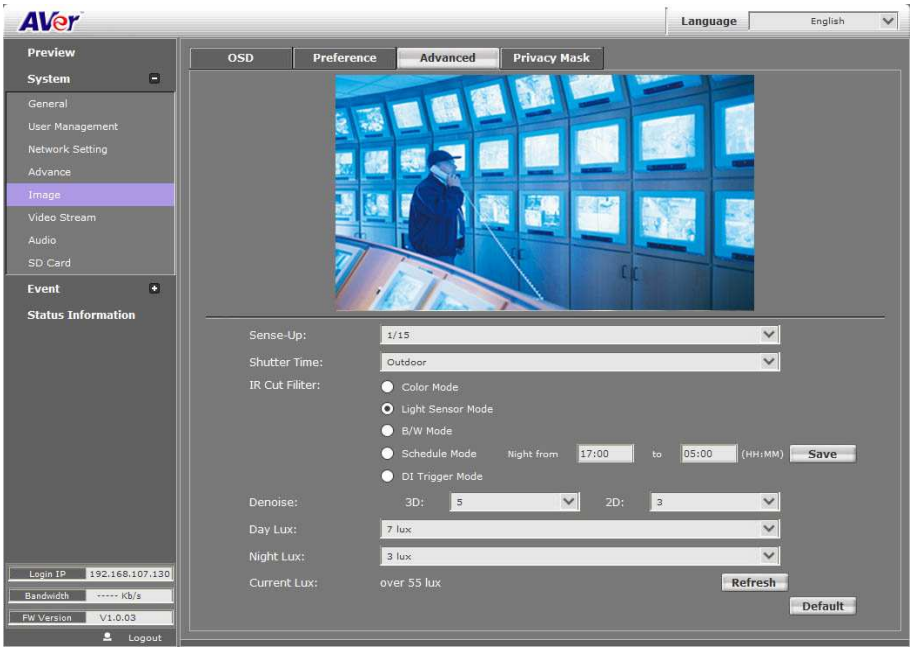
In Preference tab, you can tune the IP camera white balance, change the video orientation, and adjust the brightness and contrast.



- **White Balance:** Adjust white balance value.
- **Video Orientation:** To **Flip** or **Mirror** the video on screen.
- D-WDR: This function is able to reduce the contrast in the view to avoid the dark zones resulting from over and under exposure.
- Adjust "**Brightness**", "**Contrast**", "**Hue**", "**Saturation**" to get clear video.

System > Image > Advanced

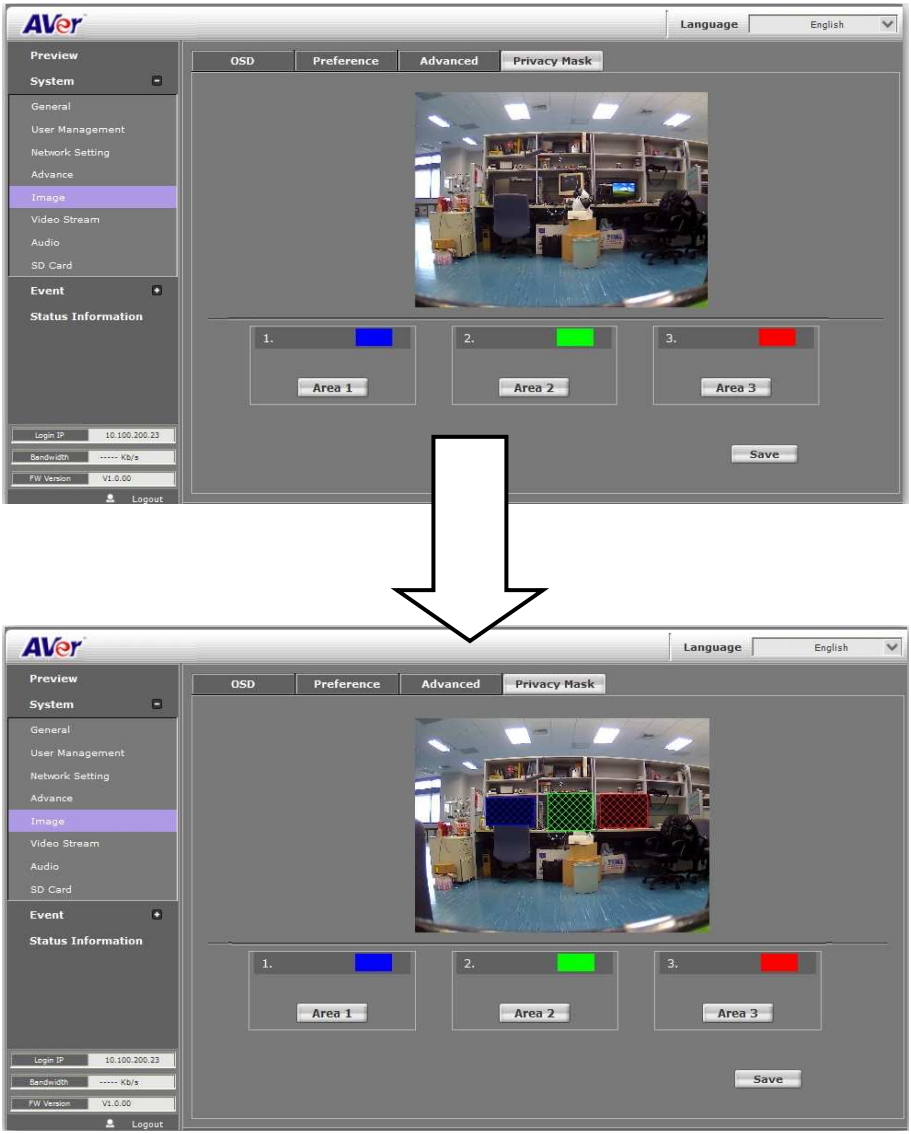
Click **Default** button will back to factory default setting.



- **Sense-UP:** The main purpose of sense-up is to provide a camera technology that does not rely on artificial light to see in very low light conditions. By The shutter stays open longer, allowing more light into the camera and seeing better in low light. This setting altogether when there is a moving object in the image and the faster the object moves, the worse the image appears (blurriness).
- **Shutter Time:** Adjust the shutter time level to get the best image quality.
- I**R Cut Filter**: Select the IR cut filter mode – Color Mode, Light Sensor Mode, B/W Mode, Schedule Mode, or DI Trigger Mode. When you choose "Light Sensor Mode", the image will be turned to black and white at night in order to keep clear. To set light sensor mode, appoint a lux standard of switching D/N here. Current lux value is provided for reference. Under "Times Mode" the switch time of Color / Black and white is according to the given time. You can also control it by choosing "Color" or "B/W"
- **Denoise**: This function is able to filter the noise and blur from the image and show a clearer view. "3D" and "2D" are two different de-noising approaches.3D denoise analyzes successive pictures to detect the noise places while 2D denoise analyzes only single picture.

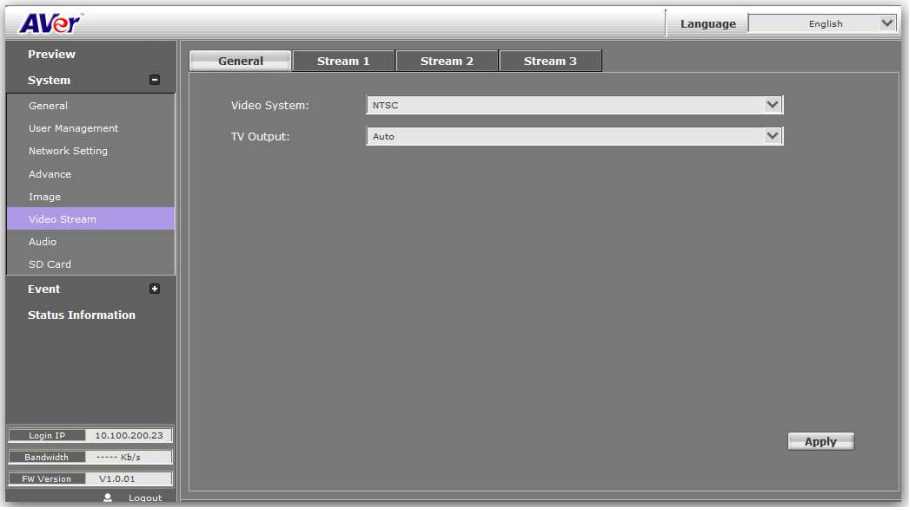
System > Image > Privacy Mask

For the security purpose, there are three areas can be setup for privacy mask. Click Area #(Area 1, Area 2, Area 3)button first and drag a area on the image screen. Then, click **Save** button to save the setting.



System > Video Stream> General

- **Input Resolution:** Select the video resolution that is the maximum resolution supported in Stream 1 and Stream 2.
- **Video System:** Select the video format.
- **TV Output:** Select the video format of TV Output. (depending on different models)



System > Video Stream > Stream1

- **Basic Mode**

  Click **Apply** to save the configuration.

  – **Resolution:** There are 5 resolutions can be chosen – 1920x1080, 1280x720, 640x480, 320x240, 176x144.

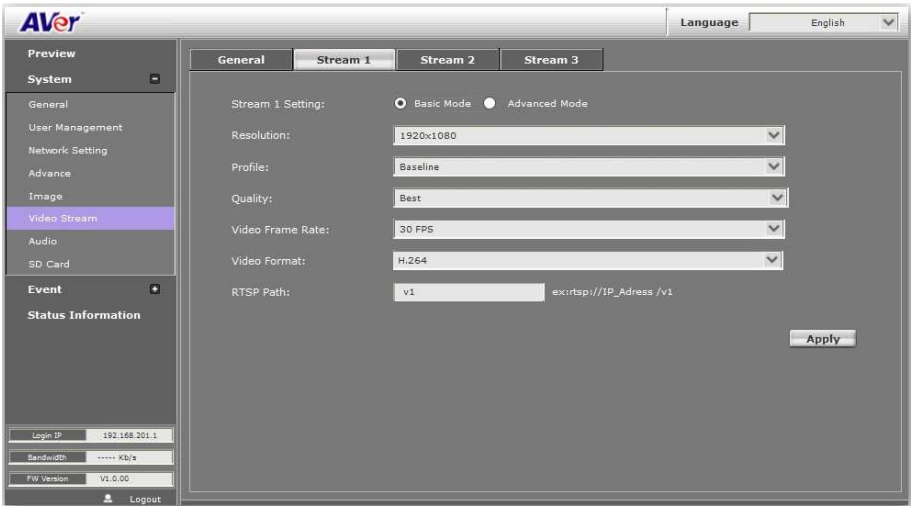
  – **Profile:** Profiles are different compression way of H.264. High profile provides better coding efficiency. Note that some devises do not support every profile. For example, iPhone4 only supports Main profile.

  – **Quality:** There are 5 levels to adjust – Best, High, Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for internet transmitting.

  – **Video Frame Rate:** The video refreshing rate per second.

  – **Video Format:** H.264 or JPEG.

  – **RTSP Path:** It's a URL address.



- **Advanced Mode**

  Click **Apply** to save the configuration.

  – **Resolution:** There are 5 resolutions can be chosen-- 1920x1080, 1280x720, 640x480, 320x240, 176x144.

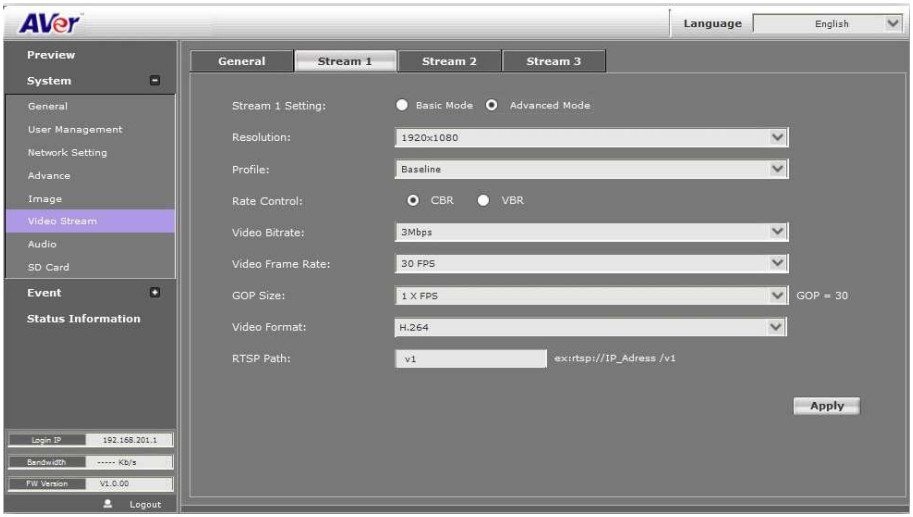
  – **Profile:** Profiles are different compression way of H.264. High profile provides better coding efficiency. Note that some devises do not support every profile. For example, iPhone4 only supports Main profile.

  – **Rate Control:** There are CBR (Constant Bit Rate) and VBR (Variable Bit Rate) to use.

  ✓ **CBR:** 32Kbps~8Mbps (the higher the CBR is, the better the video quality is).

- ✓ **VBR:** 1(Low) ~10(High) – Compression rate, the higher the compression rate, the better the picture quality is; vise versa. The balance between VBR and network bandwidth will affect picture quality. Please carefully select the VBR rate to avoid picture breaking up or lagging.

– **Video Frame Rate:** The video refreshing rate per second.
– **GOP Size:** It means "**Group of Pictures**".
– **Video Format:** H.264 or JPEG
– **RTSP Path:** It's a URL address



System > Video Stream > Stream2

- **Basic Mode**

  Click **Apply** to save the configuration.

  – **Resolution:** There are 5 resolutions can select -- 1920x1080, 1280x720, 640x480, 320x240, 176x144.

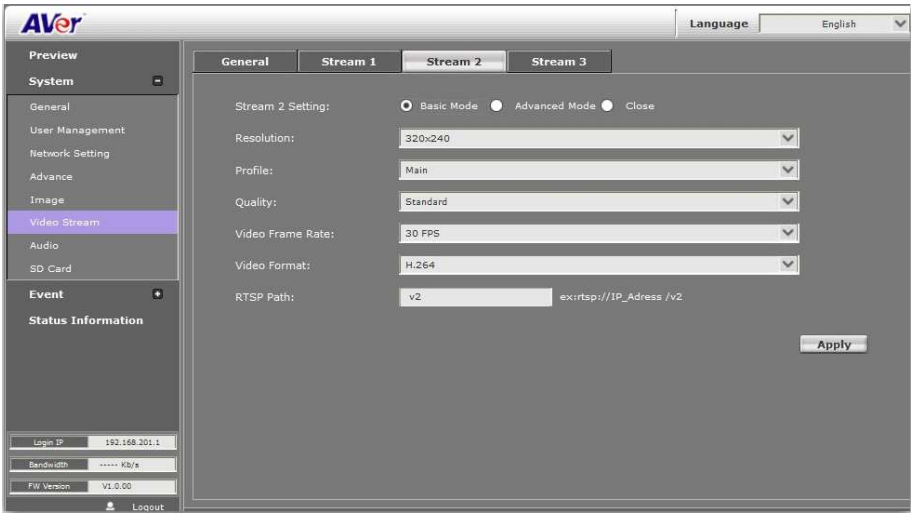
  – **Profile:** Profiles are different compression way of H.264. High profile provides better coding efficiency. Note that some devises do not support every profile. For example, iPhone4 only supports Main profile.

  – **Quality:** There are 5 levels to adjust – Best, High. Standard, Medium, and Low. The higher the quality is, the bigger the file size is. Also not good for internet transmitting

  – **Video Frame Rate:** The video refreshing rate per second.

  – **Video Format:** H.264 or JPEG

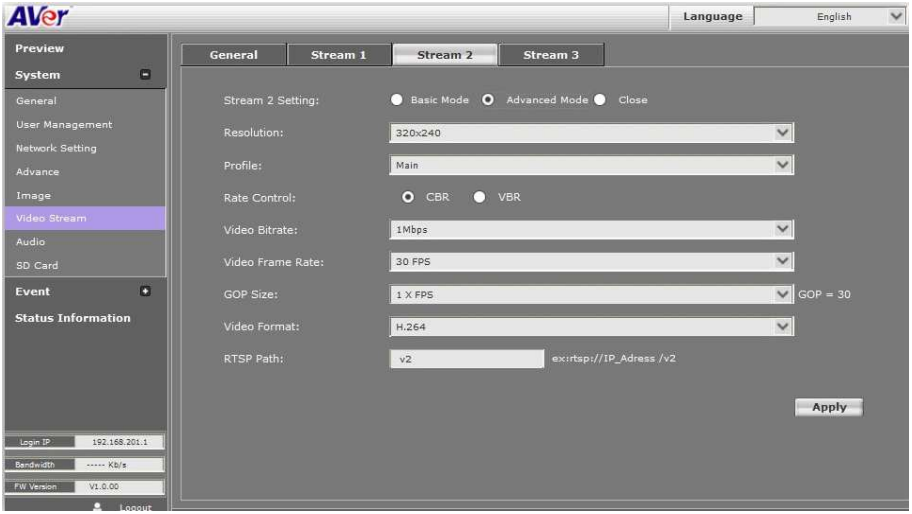
  – **RTSP Path:** It's a URL address



- **Advanced Mode**

  Click **Apply** to save the configuration.

  – **Resolution:** There are 5 resolutions can select -- 1920x1080, 1280x720, 640x480, 320x240, 176x144.
  – **Profile:** Profiles are different compression way of H.264. High profile provides better coding efficiency. Note that some devises do not support every profile. For example, iPhone4 only supports Main profile
  – **Rate Controls:** CBR or VBR
  – **Video Bitrate:** Select the bitrate of video.
  – **Video Frame Rate:** The video refreshing rate per second.
  – **Video Format:** H.264 or JPEG.
  – **RTSP Path:** It's a URL address

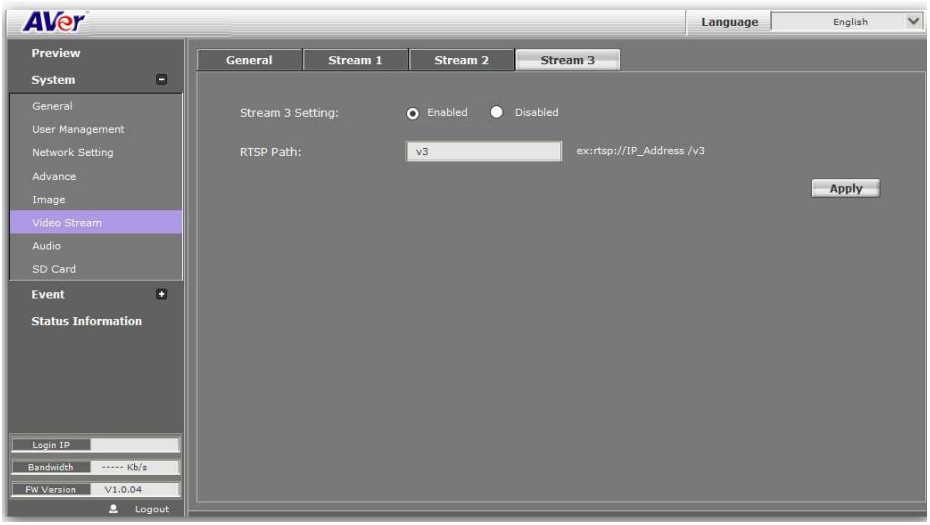


- **Close:** To close the stream 2. Click **Apply** to save the configuration.

System > Video Stream > Stream3

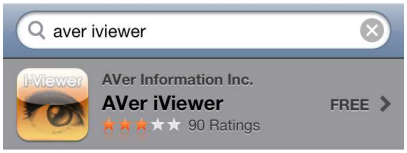
3GPP Streaming is designed for mobile viewing.

- **Stream 3 Setting: Enable** or **Disable** 3GPP Streaming.
- **3GPP Path:** It's a URL address.



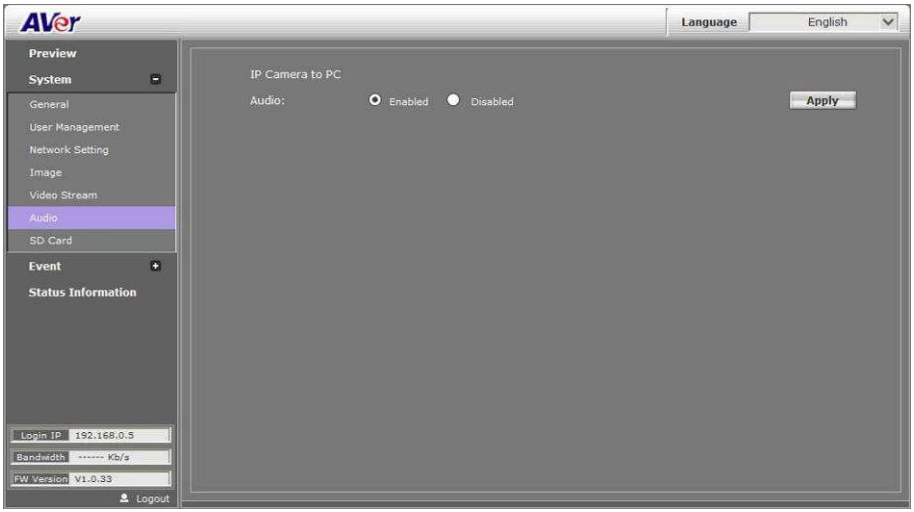
[Note]

1. 3GPP mode video spec: 320x240 resolutions, 15FPS, MPEG4 format. (Audio: AMR)
2. To get the best mobile viewing quality, please download AVeriViewer (AndroidViewer) from the Apple App store or Google Play. iViewer takes video from Stream 1 or Stream 2, not from 3GPP streaming.



System > Audio

IP camera supports 2-way audio (mono). User can send audio from IP camera built-in MIC (depending on different models) to remote site; User can also send audio from remote site to IP camera's external speaker.

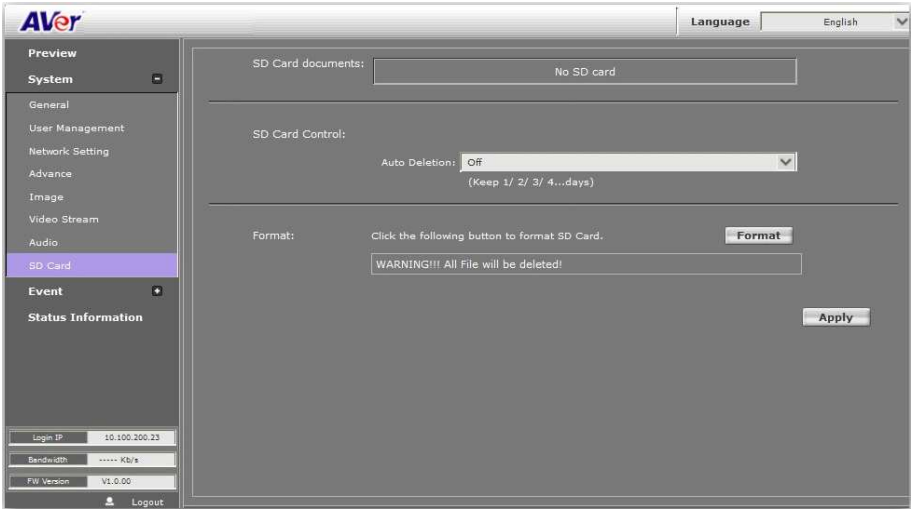


a. IP camera to PC: select "**Enable**" to start this function.

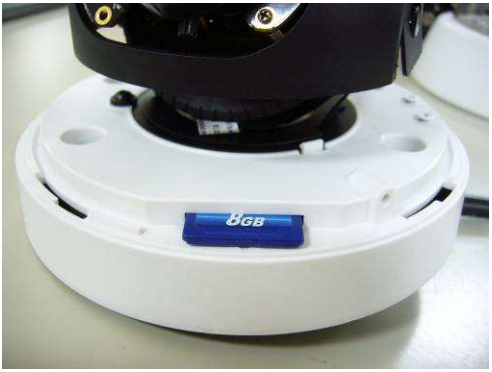
b. In live video screen, click button to start chatting. Press again to mute.Click button to turn on or off the speaker of PC.

[Note] The Audio will not be smooth when enable SD/SDHC card recording function simultaneously.

System > SD Card



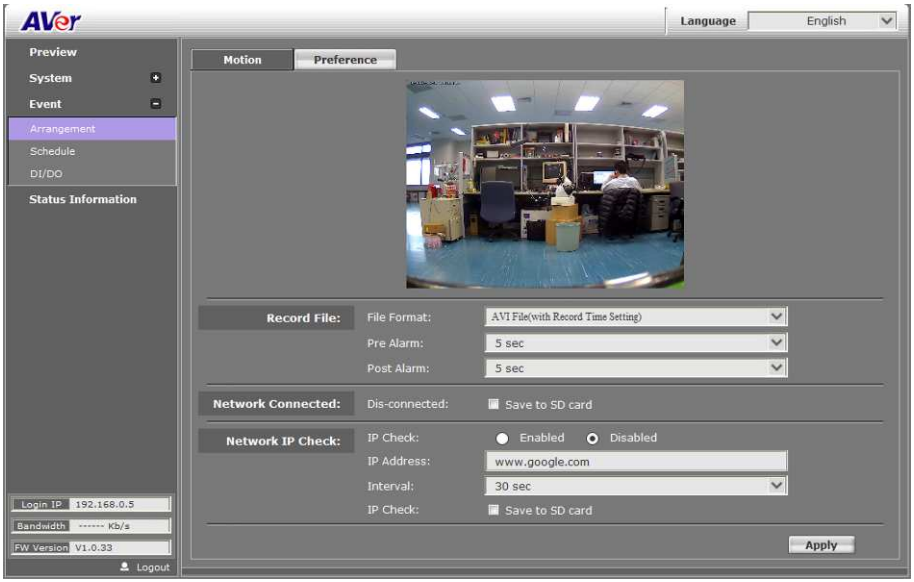
Please Insert SD/SDHC card before use it. Make sure pushing SD/SDHC card into the slot completely.
[Note]The use of the SD/SDHC card will affect the operation of the IP camera slightly, such as affecting the frame rate of the video.



Event > Arrangement > Motion

Motion Detection: IP camera allows 3 areas motion detection. When motion is triggered, it can send the video to some specific mail addresses, transmit the video to remote ftp server, trigger the relay, and save video to local SD/SDHC card. To set up the motion area 1, click "**Area 1**" button. Using mouse to drag and draw the area. The same operation for area 2 and 3. (The higher the sensitivity value is, the more sensitive to trigger event.)

Event > Arrangement > Preference



- **Record File:**
  - **File Format:** IP camera allows 3 different types of recording file to change its record size. When motion/alarm is triggered, there are 3 different types of record mode.
    - AVI File (With Record File Setting)
    - JPEG Files (With Record File Setting), only with M-JPEG compression format.
    - Single JPEG (Single File with Interval Setting)(JPEG photo).
  - **Pre Alarm and Post Alarm:** Setups for video start and end time when motion detected, I/O, or other devices got triggered.

  [Note] Pre/Post Alarm record time is base on record time setting and IP camera built-in Ram memory. Limited by IP camera built-in Ram Memory, When information is too much or video quality set too high, it will cause recording frame drop or decrease on post alarm recording time.

- **Network Connected:** When the network is down, it will save the video to local SD/SDHC card.

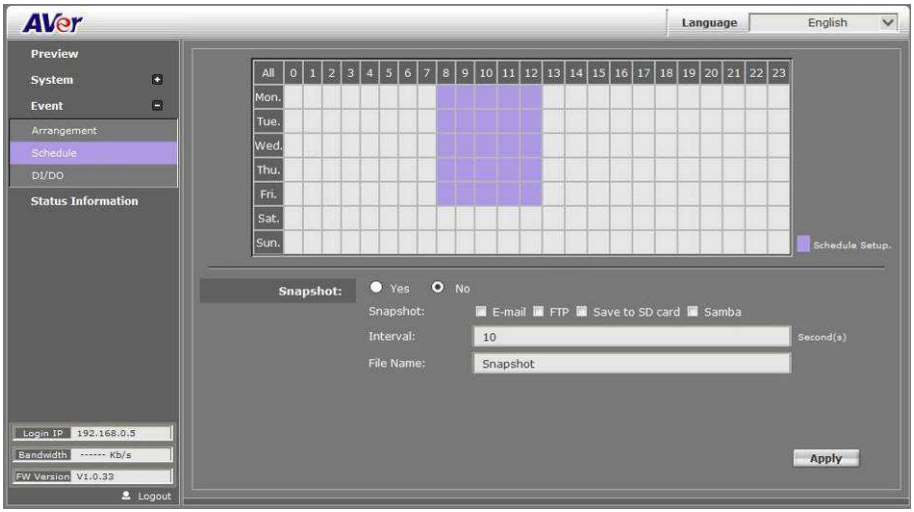
[Note]This function is only enabled in wire connection.

- **Network IP check:** When the connection is down, it records the **video** to SD/SDHC card. Make sure the video recording is continuous. To use this function, key in the IP address of the PC which has recording software installed. Enable the function of "**Save to SD card**", then click "**Apply**".

[Note] The interval of two video files on SD/SDHC card is fixed with 30 seconds.

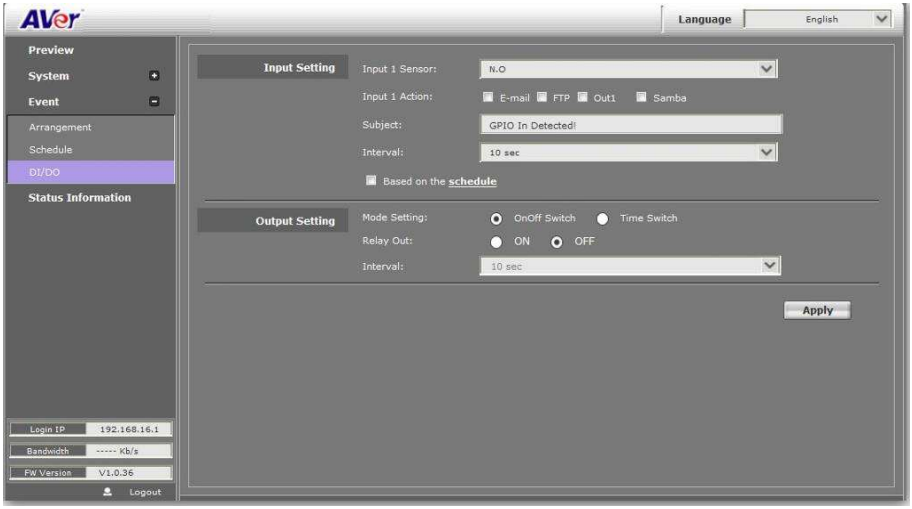
Event > Schedule

- **Schedule:** After complete the schedule setup, the camera data will be recorded according to the schedule setup.
- **Snapshot:** After enable the snapshot function; user can select the storage position of snapshot file, the **Interval time** of snapshot and the reserved **File Name** of snapshot.



Event > DI/DO

IP camera supports 1 input/1 output (depending on different models). When input is triggered, it can send the video to some specific mail addresses, transmit the video to remote ftp server, trigger the relay, and save video to local SD/SDHC card.

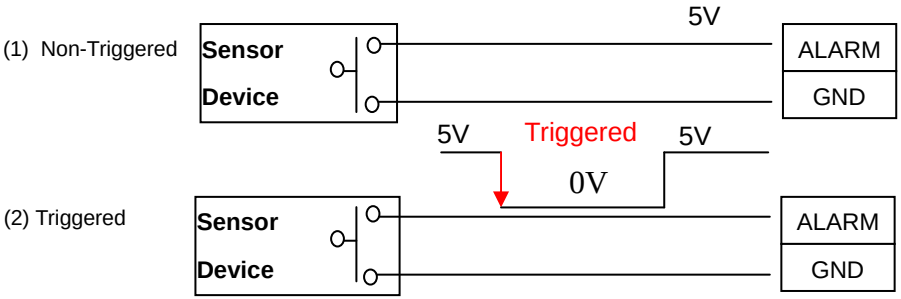


CAUTION!!

Please connect to propriety relay box to reduce the risk of electric shock & damaged.

Input Setting:

Input 1 sensor: This is to set the relay status while sensor is not yet triggered.
Input 1 action: Send the triggered video clips or photos to the selected method.
Subject: This is the subject while sending files via e-mail.



Output Setting:

Mode setting:

OnOff Switch: Relay status is based on sensor triggered times.

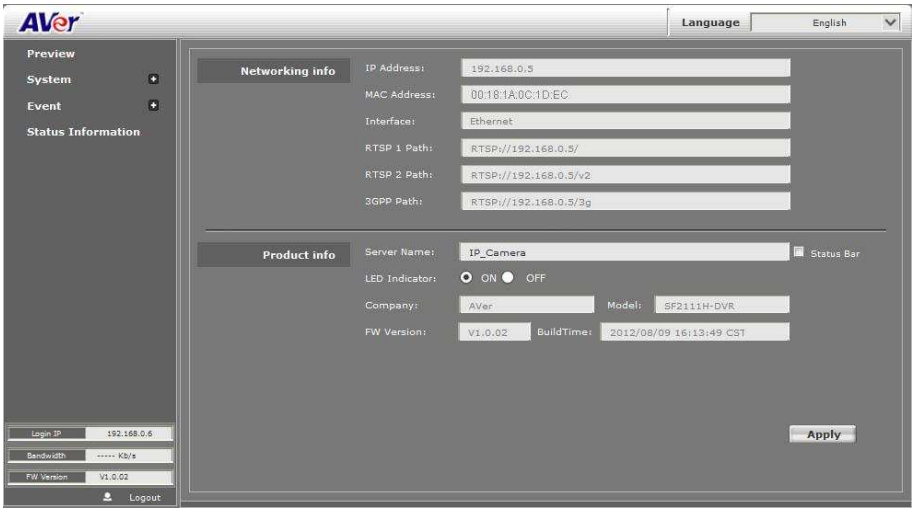
Time Switch: To restore the original relay status after the interval time.

[Note]GPIO pin define please refer to the part of Front / Back plane & I/O port pin assignment.

Ground (G)	**ALARM INPUT:**
DI	Normal: 5V (The voltage differential from ALM_IN pin & Ground) Active: 0V (Short the pin of ALM_IN and Ground pin)
DO	**RELAY OUTPUT:**
Ground(G)	MAX: 50 mA, DV 5V

Status Information

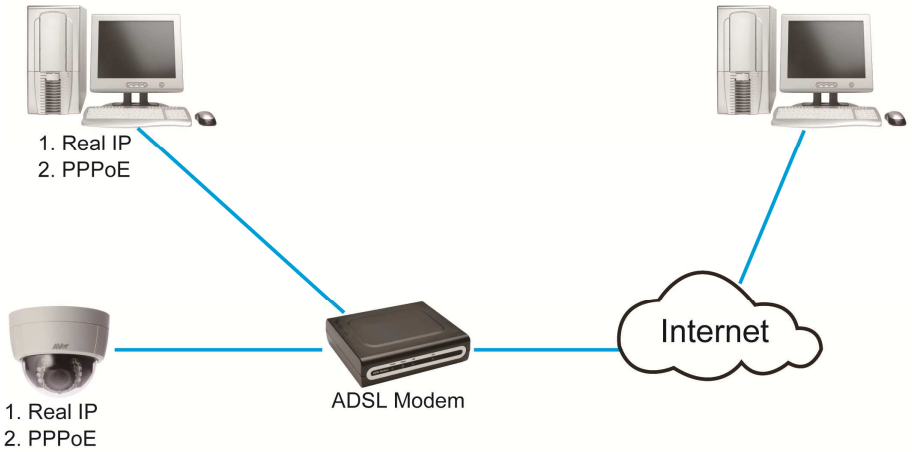
Click **Apply** button to save the configuration.



- **Networking Info:** Displays network information of the IP camera.
- **Product Info:**
  - **Server Name:** Assigns a name to the IP camera and the name shows on the IP Installer. Also, displays the related information of the IP camera. Mark **Status Bar** to display the Server Name of IP camera on preview interface.
  - **LED indicator:** To disable or enable the LED indicator on the IP camera. Only SF2111H-B/D/DV has this function.

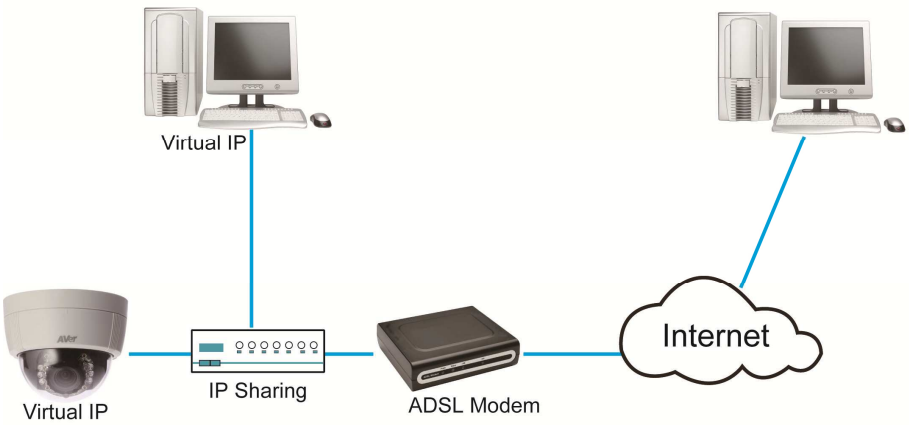
Network Configuration

■ Configuration 1



a. Internet Access: ADSL or Cable Modem
b. IP address: More than one real IP
c. IP camera and PC connect to the internet
d. For fixed real IP, set up the IP into IP camera and PC. For dynamic IP, start PPPoE.

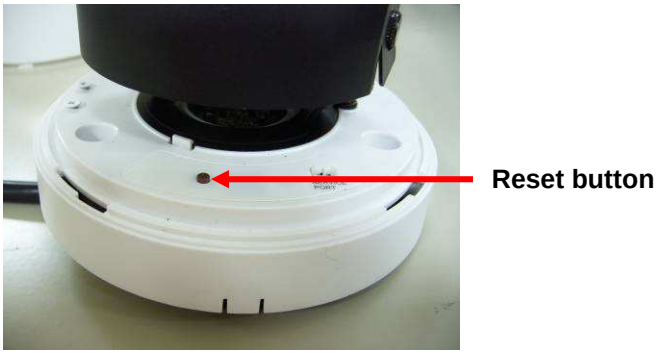
■ Configuration 2



a. Internet Access：ADSL or Cable Modem
b. IP address：one real IP
c. IP camera and PC connect to the internet
d. Device needed：IP sharing
e. Use virtual IP, set up port forwarding in IP sharing.(Please refer to Network Setting→Other 1→UPnP Port Forwarding)

Factory Default

1. To recover the default IP address and password, please follow the following steps.
2. Remove power, and press and hold the button. Please refer to the picture below.



3. Power on the camera. Don’t release the button during the system booting.
4. It will take around 30 seconds to boot the camera.
5. Release the button when camera finishes proceed.
6. Re-login the camera using the default IP (http://192.168.1.200) or DHCP, and user name (**admin**), password (**admin**).

Troubleshooting

Here are some useful tips on how to solve some common problems.

Problem	Solution
I forgot the account and password for SF2111H-DR. How can I go back to default setting?	Please refer to the manual of “VI Factory Default setting” description.
I can’t find a way to force day mode and night mode. Is this possible and how.	We don't provide this function due to the limitation of hardware.
I recorded video file in H.264 file format but failed to playback on Media Player (V.9).	Default Windows Media Player doesn’t have H.264 decoder so that you can’t playback the file successfully. Please install K-Lite program in advance or install KMPlayer or VLC program to playback the video file. You can search those free program on Internet.

Appendix

SF2111H-DR is compliant with SD/SDHC card and to ensure recording quality, and please use memory cards over 2G and Class 4 above (Max. 32G)

MicroSD/SDHC card	SD/SDHC
Transcend SDHC class4 16GB	Transcend SDHC Class 4 16GB
Transcend SD class4 16GB	Transcend SD Class 4 16GB
Transcend SDHC class4 32GB	Transcend SDHC Class 4 32GB
Transcend SD class4 32GB	Transcend SD Class 4 32GB
Transcend SD class6 4GB	Transcend SD Class 6 4GB
Transcend SDHC class6 4GB	Transcend SDHC Class 6 4GB
Transcend SD class6 8GB	Transcend SD Class 6 8GB
Transcend SDHC class6 8GB	Transcend SDHC Class 6 8GB
Transcend SD class6 16GB	Transcend SD Class 6 16GB
Transcend SDHC class6 16GB	Transcend SDHC Class 6 16GB
Transcend SDHC class10 4GB	Transcend SDHC Class10 4GB
Transcend SDHC class10 8GB	Transcend SDHC Class10 8GB
Transcend SDHC class10 16GB	Transcend SDHC Class10 16GB
SanDisk SDHC class4 4GB	SanDisk SDHC Class 4 4GB
SanDisk SDHC class4 8GB	SanDisk SDHC Class 4 8GB
SanDisk SDHC class4 16GB	SanDisk SDHC Class 4 16GB
SanDisk SDHC class4 32GB	SanDisk SDHC Class 4 32GB

- SF2111H-R/SF2111H-DR: SDHC/SD card
- SF2111H-BR/SF2111H-DVR: microSDHC/SD card

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